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00100  
1008

CTF-TESTR164P1008

Exemption 6

R718106  
and  
R718108

W31 Forklift Shock, Truck  
Transportation Vibration and Launch  
Vibration Environments

Exemption 6

RECEIVED  
OCT 11 '85  
CENTRAL TECH FILE

*#*  
31-Pray

Approved by:

*J D Woodall*  
Test Engineer, 7542A

Distribution:  
5113 R. W. Jorgensen  
Attn: C. E. Johnston  
7542A File  
3144 Central Technical File

12

001009

R718106  
and  
R718108

## Table of Contents

|                                    |       |
|------------------------------------|-------|
| Test Planning Requests             | 3-12  |
| Introduction                       | 13    |
| Procedure and Results              | 14    |
| Figures 1-8 Test Setup Photographs | 15-22 |
| Figure 9 - Data                    | 23-63 |
| APPENDIX - Color Photographs       | 64-72 |

001010

## TEST PLANNING REQUEST

|                                            |             |                                          |                                                         |                  |             |
|--------------------------------------------|-------------|------------------------------------------|---------------------------------------------------------|------------------|-------------|
| Alt. Object Leader/Engineer                | Engineer/TC | Org.                                     | Phone                                                   | Date             | Test Number |
| Dan Gregory                                |             | 7542                                     | 4-1074                                                  | May 24, '85      | R-718106    |
| Requester (Last, First, Middle Initial)    |             | Org.                                     | Bldg.                                                   | Phone            | Case Number |
| Johnston, Carl E.                          |             | 5113                                     | 836                                                     | 4-7122           | 1382,010    |
| Test Item                                  | Dwg. No.    | Approximate Dimensions                   |                                                         | Total Quantity   |             |
| W31YI-3 Warhead on H541B<br>Handling Dolly | CD301708    | W31= 900<br>H541= 500<br>Total= 1400 (b) | Total: 41" W x 59" L x 48" H<br>(Warhead Max. dia= 29") | 1 ea Test System |             |
| Responsible Design Org.                    | 5113        | Weight                                   | Size                                                    |                  |             |
| Security Classifications                   | Name        | Test Item                                | Association                                             | Visual           | Data/Report |
| Highest = CRD                              | UNC         | CRD                                      | UNC                                                     | UNC              | UNC         |

CNWDI Material\*  Category 1 SS Material\* (Security Procedures Required When Marked)

\*Security escort and/or protection of material required if either item checked.

Hazards  None  Yes (Hazards Information Form Required When Marked)

Type  Explosives Self Contained  SS Material  Toxic Material

Explosives Other  Pressure Devices  Other Hazards

Title of Test W31 Transportation Vibration and Forklift Shock, XYZ, Room Temp.

Purpose: To test the capability of the W31 Warhead Electrical Assembly to function properly after exposure to truck transport vibration and Forklift-handling shock.

Description: Refer to the Attachment for test specs, warhead axes definition, along with the requirements for instrumentation, data acquisition, etc.

Test Unit Available

Test Start Date 5/29/85 Test Period \_\_\_\_\_ Estimated Test Duration \_\_\_\_\_

Report Desired  Complete Report  Data Report  Memo  No Report

Cost Estimate Desired  No  Yes (Environmental Test Estimate Form Required When Marked)

Test Fixture Available  No  Yes  New Fixture (None required)

## Test Support Activities

| General Test                        |                           | Resp. Org. |
|-------------------------------------|---------------------------|------------|
| <input checked="" type="checkbox"/> | Test Plan/Specifications  | 5113       |
| <input checked="" type="checkbox"/> | Instrumentation List      | 5113       |
|                                     | Test Control Drawing      |            |
| <input checked="" type="checkbox"/> | Safe Operating Procedures | 7542       |
| <input checked="" type="checkbox"/> | Test Report Distribution  | 5113       |

| General Test                        |                          | Resp. Org. |
|-------------------------------------|--------------------------|------------|
| <input checked="" type="checkbox"/> | Vibration Test Spec.*    | 5113       |
| <input checked="" type="checkbox"/> | Shock Test Spec.*        | 5113       |
|                                     | Acceleration Test Spec.* |            |
|                                     | Climatic Test Spec.*     |            |
|                                     | Static Test Spec.        |            |

| Test Support                        |                            | Org. |
|-------------------------------------|----------------------------|------|
| <input checked="" type="checkbox"/> | Still Photography          | 7542 |
|                                     | Photometrics (Data)*       |      |
|                                     | Photometrics (Documentary) |      |
|                                     | TM Design                  |      |

| Test Support |                        | Org. |
|--------------|------------------------|------|
|              | TM Recording           |      |
|              | Instrumentation Design |      |
|              | Facility Design*       |      |
|              | Flash X-Ray            |      |

\*Supplemental Form Required when marked

Test Location  AI  AIII  Coyote  Other \_\_\_\_\_

| Test Facility                                   | Bldg. |
|-------------------------------------------------|-------|
| Centrifuge                                      |       |
| Climatic                                        |       |
| Radiant Heat                                    |       |
| <input checked="" type="checkbox"/> Vibration * | 6560  |
| Static Lab                                      |       |
| Pressure Lab                                    |       |

| Test Facility   | Bldg. |
|-----------------|-------|
| Shock Lab       |       |
| 1B-in. Actuator |       |
| Ramp and Drop   |       |
| Sled Track      |       |
| Rocket Launcher |       |
| Ballistics Lab  |       |

| Test Facility       | Bldg. |
|---------------------|-------|
| Aerial Cable        |       |
| Shock Tube          |       |
| Explos. Firing Site |       |
| Drop Tower          |       |
| Radiograph/NDT      |       |
| Other               |       |

SA 7880-B111-1981 \* Dynamic & hydraulic shakers

001011

ATTACHMENT  
(CR 718106)  
Page 1 of 5

W31Y1-3 Truck- Transport Vibin. &amp; Forklift shock

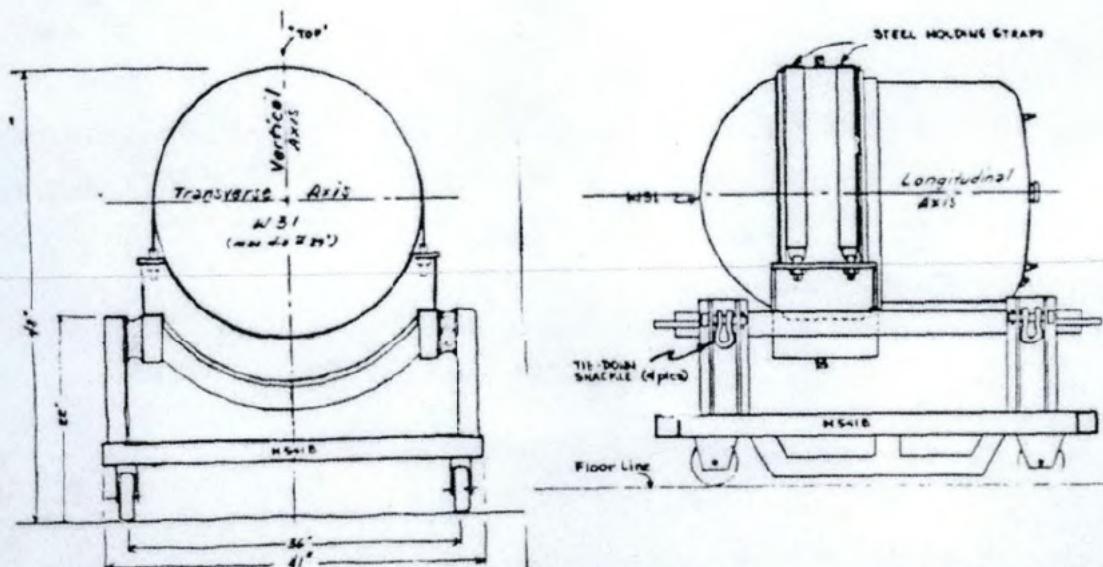
TEST SPECS

Transportation Random Vibration - W31. (1)

| <u>Axis</u>  | <u>Environmental Source</u> | <u>Test Duration (hrs.)</u> | <u>Reference Figure</u> |
|--------------|-----------------------------|-----------------------------|-------------------------|
| Vertical     | Truck                       | 3                           | 1                       |
| Transverse   | Truck                       | 3                           | 2                       |
| Longitudinal | Truck                       | 3                           | 3                       |

Handling Shock - W31 and Components. (1)

| <u>Axis</u> | <u>Environmental Source</u> | <u>Number of Shock/Axis</u> | <u>Reference Figures</u> | <u>Reference Table</u> |
|-------------|-----------------------------|-----------------------------|--------------------------|------------------------|
| Transverse  | Forklift                    | 2 (2)                       | 4 & 5                    | 1                      |



W31 DEFINITION OF AXES  
(Not to Scale)

[B - Accelerometer]

---

(1) W31 shall be stabilized at room temperature  
 (2) In the same direction

001012

W31Y1-3 Truck Transport Vibn &amp; Forklift Circ. - Contd.

ATTACHMENT  
(R718106)  
Page 2 of 5

TABLE 1 - DISCRETE SHOCKS FOR FORKLIFT TRANSPORT  
 DECAYED SINUSOID PULSES  $A_0 e^{-2 ft} \sin (2 ft)$   
 FORKLIFT - LONGITUDINAL\*

| Pulse No. | $A_0 (g)$ | $A (g)$ |      | f (Hz) | Duration (sec.) | Delay Time (sec.) |
|-----------|-----------|---------|------|--------|-----------------|-------------------|
| 1         | 1.53      | 1.0     | 0.3  | 2.0    | 0.84            | 0.138             |
| 2         | 1.2       | 0.89    | 0.2  | 4.5    | 0.84            | 0.138             |
| 3         | 2.44      | 2.1     | 0.1  | 9.0    | 0.84            | 0.138             |
| 4         | 15.04     | 9.81    | 0.3  | 40.0   | 0.84            | 0.138             |
| 5         | 7.35      | 6.6     | 0.07 | 70.0   | 0.84            | 0.138             |
| 6         | 9.01      | 7.85    | 0.09 | 100.0  | 0.84            | 0.138             |
| 7         | -3.2      | -1.12   | 0.9  | 1.0    | 0.84            | 0.0               |

Peak Accel. = 21 g, -1.5 g

Max Vel. = 23.47 in/sec., -42.24 in/sec.

Max Displ. = 1.66 in, -2.5 in

\* Corresponds to Transverse Axis of W31

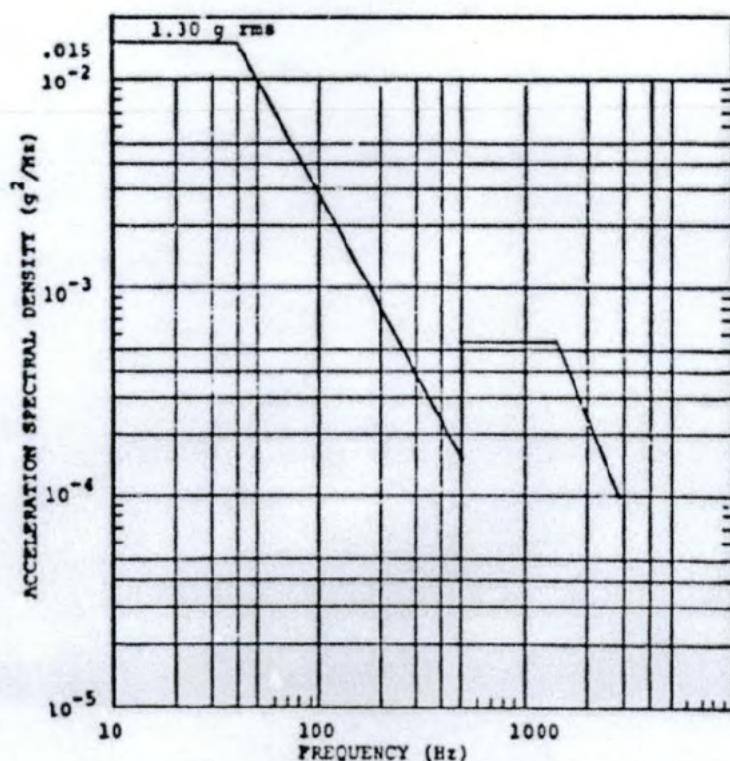


FIGURE 1 - TRUCK RANDOM VIBRATION VERTICAL AXIS

001013

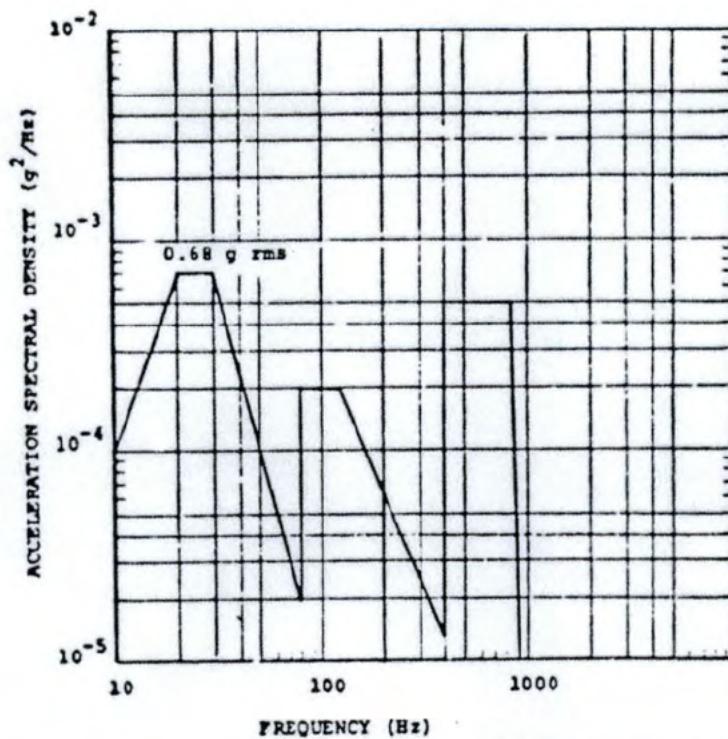
**ATTACHMENT  
(R71B106)  
Page 3 of 5**W31Y1-3 Truck Transport Vib., & Forklift shock .... Contd

FIGURE 2 - TRUCK RANDOM VIBRATION TRANSVERSE AXIS

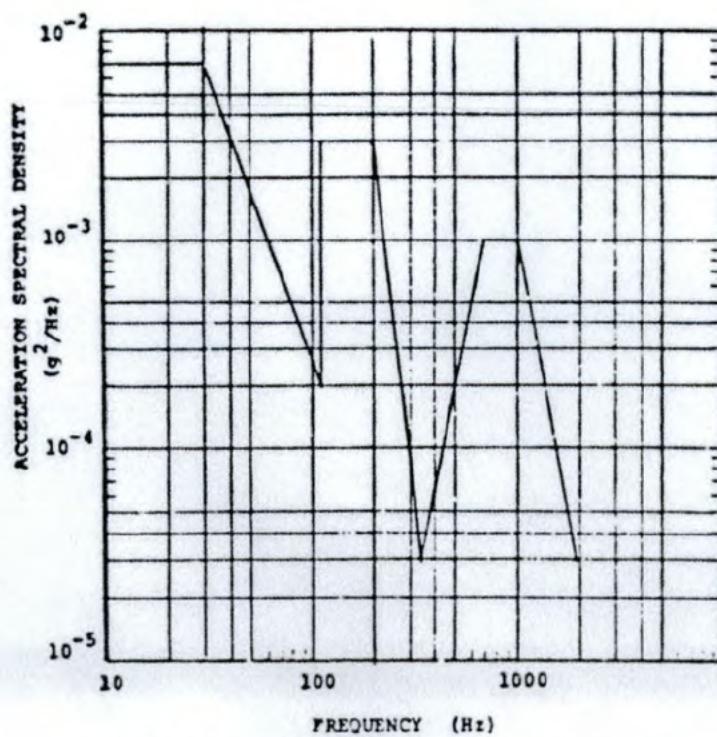


FIGURE 3 - TRUCK RANDOM VIBRATION LONGITUDINAL AXIS

U U U U U

W31YI-3 Truck Transport Vibri &amp; Forklift shock - Cont'd.

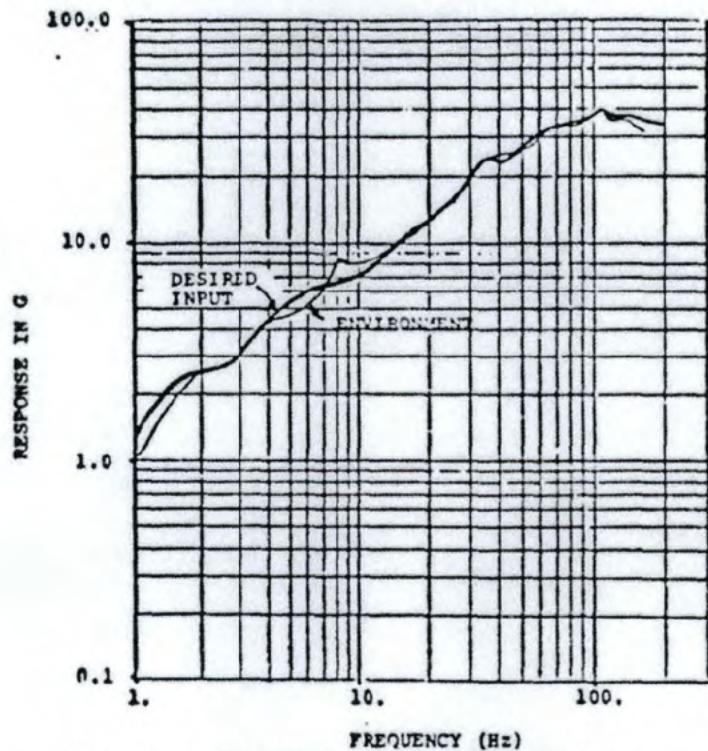
ATTACHMENT  
(2718106)  
Page 4 of 5

FIGURE 4 - FORKLIFT SHOCK - TRANSVERSE SHOCK SPECTRA  
(NOTE: W31 Vehicle axis is longitudinal.)

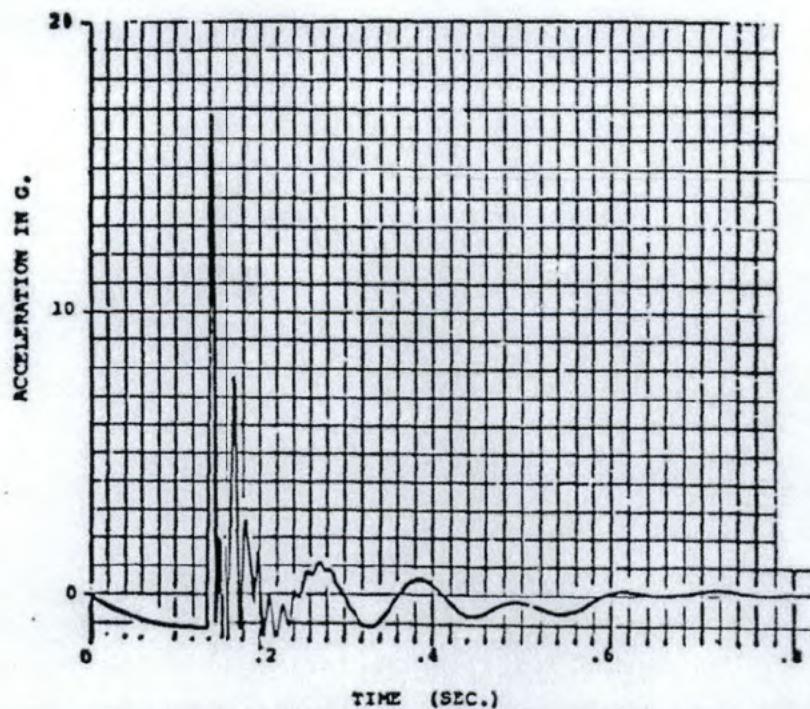


FIGURE 5 - FORKLIFT SHOCK - TRANSVERSE TIME HISTORY  
(NOTE: W31 Vehicle axis is longitudinal.)

001015

ATTACHMENT  
Page 5 of 5  
(E718106)

## INSTRUMENTATION

1 ENDEVCO 2228C on "top" of W31  
1 ENDEVCO 2228C on H541B dolly cradle for W31.  
(See "W31 Definition of Axes" figure on Page 1.)

## DATA RECORDING

ASD's only; in-axis only for the 2 accelerometers noted above, for  
vib'n. One of Ampl. vs. freq. for each shock impulse.

## REPORT DISTRIBUTION

R.W. Jorgenson, 5113 (Attn: Carl Johnston)

## PHOTOGRAPHY

1 Color shot of test setup.

TIE-DOWN

Coil chain, steel, to shackles shown in figure; tighten with  
aircraft type tie-downs.

001016  
TEST PLANNING REQUEST

|                                                                                   |                     |                                                                         |                                                |                       |
|-----------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------|------------------------------------------------|-----------------------|
| Test Project Leader/Engineer: Engineer/TC<br><br>Dan Gregory                      | Org.: 7542          | Phone: 4-1074                                                           | Date: ISSUE B<br>July 1, 1985<br>June 18, 1985 | Test Number: R-718108 |
| Requester (Last, First, Middle Initial)<br><br>Johnston, Carl E., Jr.             | Org.: 5113          | Org.: 836                                                               | Bldg.: 4-7122                                  | Phone: 1382,010       |
| Test Item: W31 Warhead Elec. Assy<br>with Covers<br>Responsible Design Org.: 5113 | Dwg. No.: CD 301708 | Approximate Dimensions:<br>400163*<br>Weight: 30" dia x 24" H.<br>Size: | Total Quantity: SEA Test System                |                       |
| Security Classification: Highest = CRD                                            | Name: UNC           | Test Item: CRD                                                          | Association: UNC                               | Visual: UNC           |
|                                                                                   |                     |                                                                         | Date/Report: UNC                               | Form: UNC             |

CNWDI Material  Category 1 SS Material\* (Security Procedures Required When Marked)

\*Security escort and/or protection of material required if either item checked.

Hazards  None  Yes (Hazards Information Form Required When Marked)

\*... Test Item mounted on  
Test Fixture.

Type  Explosives Self Contained  SS Material  Toxic Material

Explosives Other  Pressure Devices  Other Hazards

Title of Test: W31 Warhead Elec. Assy. Flight. Vibration at Rm, Hot & Cold Temps.

Purpose: To determine the capability of the W31 Warhead Electrical Assembly to function (AF 4F) after exposure to flight Vibration at launch-environment ambient, hot and cold temperatures.

Description: Refer to the attachment for test specs and warhead axes definition along with the requirements for instrumentation, data acquisition, etc.

Rate Available for Test

Test Start Date: 7/2/85 Test Period: Estimated Test Duration: 2 Weeks

Report Desired:  Complete Report  Data Report  Memo  No Report

Cost Estimate Desired:  No  Yes (Environmental Test Estimate Form Required When Marked)

Test Fixture Available:  No  Yes  New Fixture

## Test Support Activities

| General Test                        |                           | Resp. Org. |
|-------------------------------------|---------------------------|------------|
| <input checked="" type="checkbox"/> | Test Plan/Specifications  | 5113       |
| <input checked="" type="checkbox"/> | Instrumentation List      | 5113       |
|                                     | Test Control Drawing      |            |
| <input checked="" type="checkbox"/> | Safe Operating Procedures | 7542       |
| <input checked="" type="checkbox"/> | Test Report Distribution  | 5113       |

| General Test                        |                          | Resp. Org. |
|-------------------------------------|--------------------------|------------|
| <input checked="" type="checkbox"/> | Vibration Test Spec.*    | 5113       |
|                                     | Shock Test Spec.*        |            |
|                                     | Acceleration Test Spec.* |            |
|                                     | Climatic Test Spec.*     |            |
|                                     | Static Test Spec.        |            |

| Test Support                        |                            | Org. |
|-------------------------------------|----------------------------|------|
| <input checked="" type="checkbox"/> | Still Photography          | 7542 |
|                                     | Photometrics (Data)*       |      |
|                                     | Photometrics (Documentary) |      |
|                                     | TM Design                  |      |

| Test Support |                        | Org. |
|--------------|------------------------|------|
|              | TM Recording           |      |
|              | Instrumentation Design |      |
|              | Facility Design*       |      |
|              | Flash X-Ray            |      |

\*Supplemental Form Required when marked

Test Location:  AI  AIII  Coyote  Other \_\_\_\_\_

| Test Facility                                           | Bldg. |
|---------------------------------------------------------|-------|
| Centrifuge                                              |       |
| Dimetric                                                |       |
| Gradient Heat                                           |       |
| <input checked="" type="checkbox"/> Vibration 6560/6610 |       |
| Static Lab                                              |       |
| Pressure Lab                                            |       |

| Test Facility    | Bldg. |
|------------------|-------|
| Shock Lab        |       |
| 18-in. Activator |       |
| Ramp and Drop    |       |
| Sled Track       |       |
| Rocket Launcher  |       |
| Ballistics Lab   |       |

| Test Facility       | Bldg. |
|---------------------|-------|
| Aerial Cable        |       |
| Shock Tube          |       |
| Explos. Firing Site |       |
| Drop Tower          |       |
| Radiograph/NOT      |       |
| Other               |       |

001017

Attachment  
Page 1 of 4  
(2718108)

W31 Warhead Electrical Assembly Flight Vibration  
Test Specifications

| Axis                    | Test Duration/Axis (min.) | Reference Table |
|-------------------------|---------------------------|-----------------|
| Vertical and Transverse | 5                         | 1               |
| Longitudinal            | 5                         | 2               |

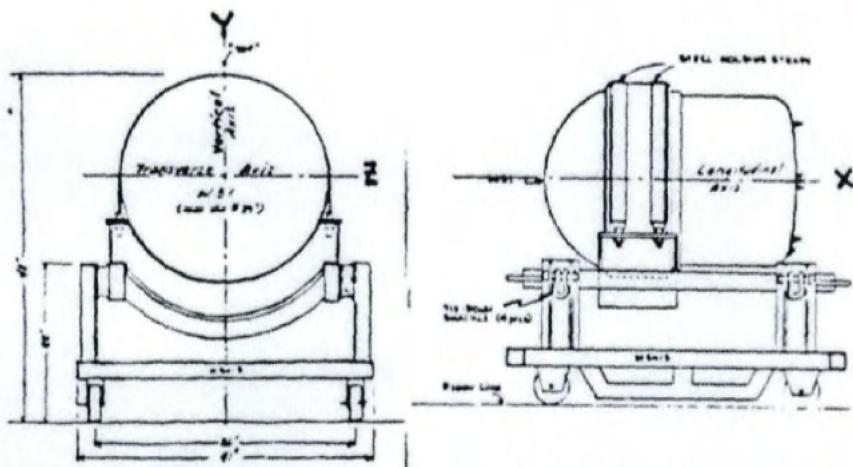
TABLE 1 - FLIGHT RANDOM VIBRATION - W31  
VERTICAL AND TRANSVERSE AXES

| Frequency (Hz)   | Acceleration Spectral Density ( $g^2/Hz$ ) |
|------------------|--------------------------------------------|
| 10 - 90          | 2.5E-4                                     |
| 90 - 130         | 2.5E-4                                     |
| 130 - 180        | 4.6E-2                                     |
| 180 - 220        | 4.6E-2                                     |
| 220 - 300        | 4.38E-4                                    |
| 300 - 350        | 4.38E-4                                    |
| 350 - 1000       | 4.30E-2                                    |
| 1000             | 4.30E-2                                    |
| $G_{rms} = 3.09$ |                                            |

TABLE 2 - FLIGHT RANDOM VIBRATION - W31  
LONGITUDINAL AXES

| Frequency (Hz)   | Acceleration Spectral Density ( $g^2/Hz$ ) |
|------------------|--------------------------------------------|
| 10 - 20          | $1.71 \times 10^{-4}$                      |
| 20 - 40          | $8.75 \times 10^{-5}$                      |
| 40 - 80          | $4.38 \times 10^{-5}$                      |
| 80 - 120         | $1.08 \times 10^{-3}$                      |
| 120 - 180        | $4.60 \times 10^{-2}$                      |
| 180 - 240        | $7.18 \times 10^{-4}$                      |
| 240 - 340        | $4.38 \times 10^{-4}$                      |
| 340 - 500        | $5.30 \times 10^{-2}$                      |
| 500 - 700        | $3.10 \times 10^{-2}$                      |
| 700 - 1000       | $4.60 \times 10^{-3}$                      |
| 1000 - 1400      | $4.68 \times 10^{-6}$                      |
| 1400 - 2000      | $3.12 \times 10^{-6}$                      |
| $G_{rms} = 8.82$ |                                            |

001018

Attachment  
Page 2 of 4  
(R718108)

Complete Warhead (for axes definition only) On Dolly

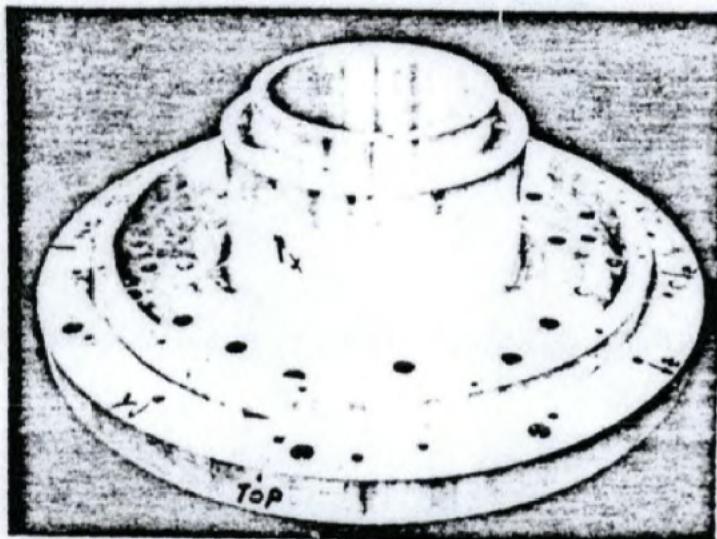


Fig 1.... Test Fixture

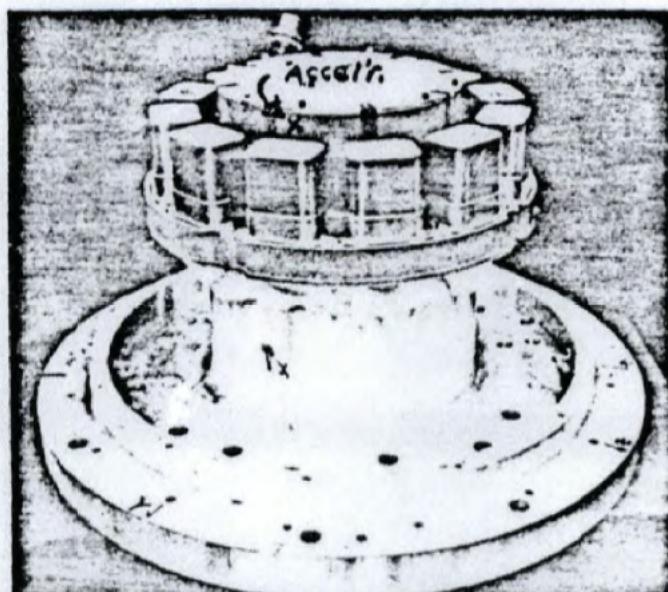
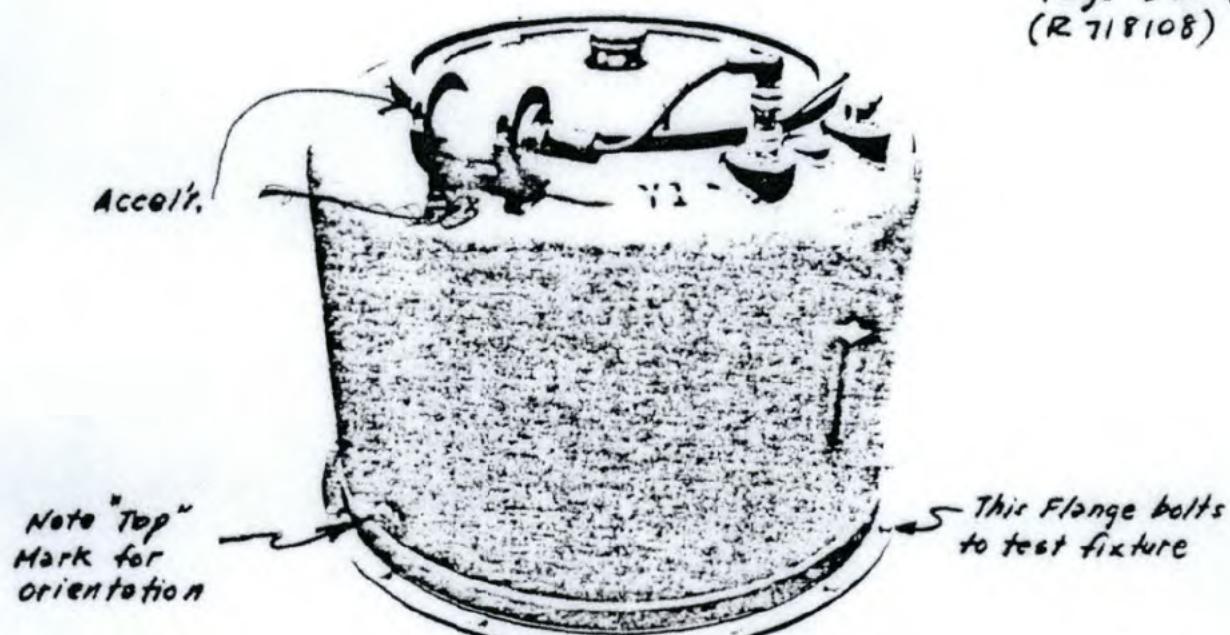
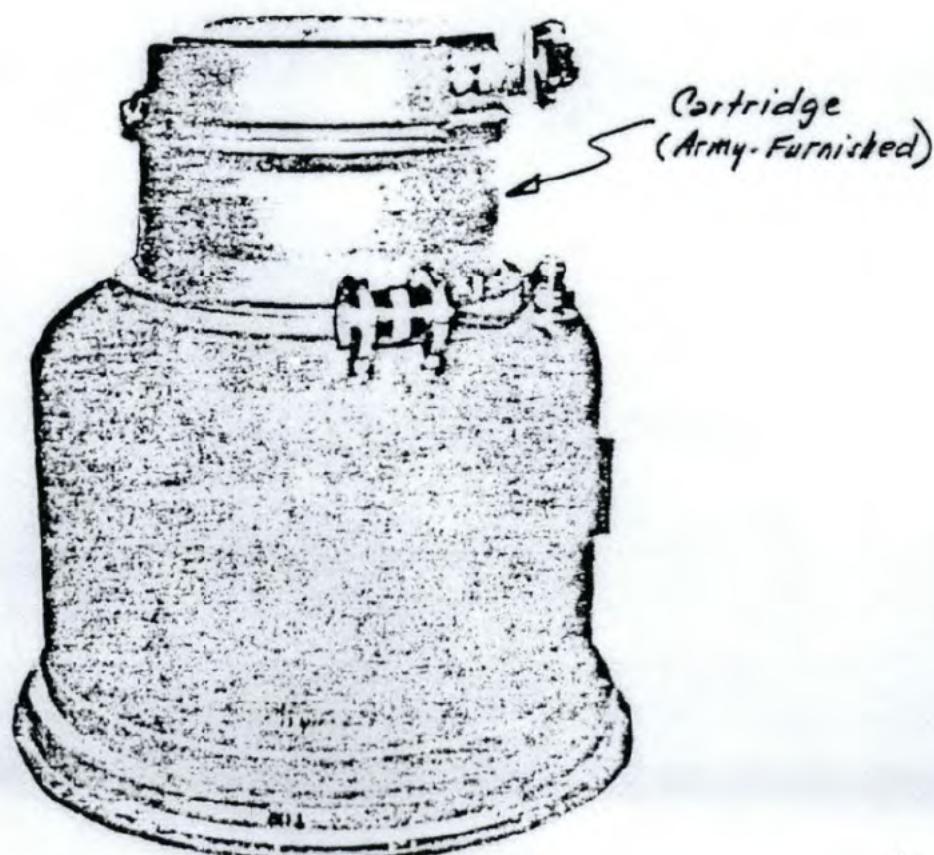


Fig. 2.... Firing Set Mounted on Test Fixture

001019

Attachment  
Page 3 of 4  
(R 718108)Fig. 3... W31 Warhead Elec. Assy. With CoversFig. 4... Complete Test System

001020

Attachment  
Page 4 of 4  
(R 718108)

Test system shall be vibrated in accordance with the above specifications while stabilized at each of the following temperatures:

Room Ambient, -25°F +125°F  
order of vibration with regard to axis and temperature is immaterial.

#### INSTRUMENTATION

Locate one triaxial accelerometer (ENDEECO Mod. 2228G) at each of the following locations (also, see figures above):

Top of Pressure Cover, near MC 3761 (see Fig. 1)  
Side of Firing set Housing (see Fig. 2)

#### DATA RECORDING

ASD's only; in-axis only for each accelerometer; for each vibration run.

#### REPORT DISTRIBUTION

R. W. Jorgensen - 5113; Attn: C. E. Johnston

#### PHOTOGRAPHY

One color exposure of test setup for room temp. vib'n. only.

(Carl Johnston)

Re: Torque values for assembly of  
W31-3 Vibration Unit.

All Connector Nuts - 100 in LBS

10-32 Screws - 25 in LBS

$\frac{1}{4}$ -28 Bolts - ~~25~~<sup>60</sup> in LBS  
(STEEL COVER)

$\frac{5}{16} \times 24$  Bolts - 120 in LBS  
(ALUMINUM COVER)

Jim Phillips

001022

Introduction

A series of forklift handling shock and truck transportation vibration tests were performed in a W31 Y1-3 Warhead on a H541B handling dolly to determine the capability of the W31 Warhead electrical assembly to function after exposure to these environments. This testing was conducted June 7, 1985 through June 11, 1985 in Bldg. 6560.

The W31 Warhead Electrical assembly was also exposed to flight vibration at launch environments at hot, cold and ambient temperatures to determine its capability to function after exposure to these environments. This testing was conducted July 3, 1985 through July 15, 1985 in Bldg. 6610.

001023

Testing Procedure and Results

The forklift shock testing was performed on the hydraulic shaker system in Bldg. 6560. This setup is shown in Figure 1. The truck transportation was performed on the C220 electrodynamic shaker in Bldg. 6560. These test setups are shown in Figures 2, 3 and 4 with the control and response accelerometers shown in Figures 5, 6 and 7. The launch vibration environments were performed on the electrodynamic shakers in Bldg. 6610. This setup is shown in Figure 8. Color photographs corresponding to Figures 1-8 are given in the Appendix.

Data for the forklift shock test are shown in Figures 9-14. Data for the truck transportation vibration test are shown in Figures 15-23. Data for the launch vibration environments are shown in Figures 24-49. The accelerometer near the MC3761 was not functional for the Y axis -25° run, and the accelerometer on the side of the firing set housing was not functional for the Z axis +125°F run.

CRS-100,701  
F71P106  
Unclassified

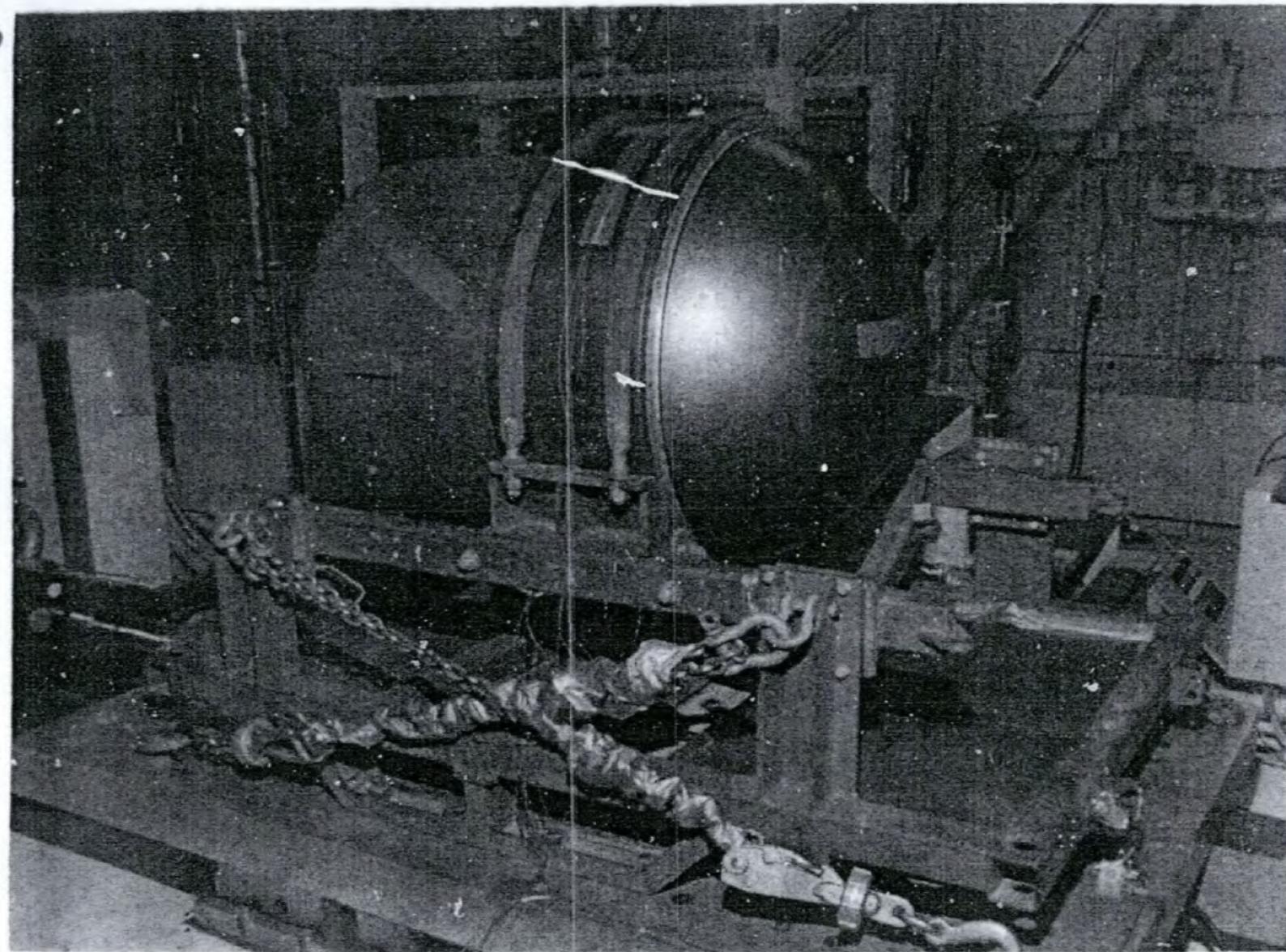
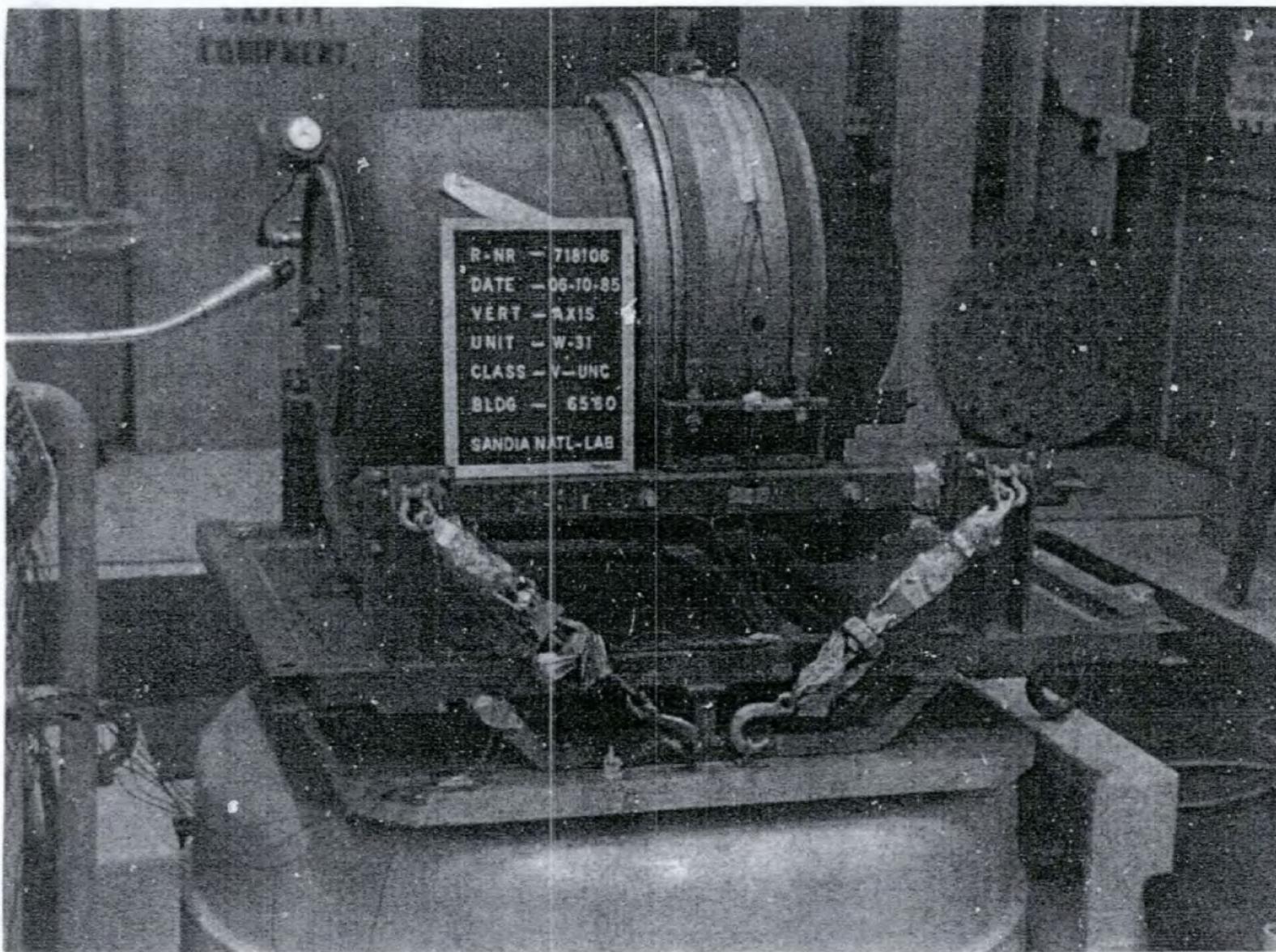


Figure 1 - Forklift Spord. Setup

001024

CR5-100,700  
R718106  
Unclassified



001025

Figure 2 - Truck Vib, 2 - 2 - Vertical Setup

CB5-100,607  
8718106  
Unclassified

001026

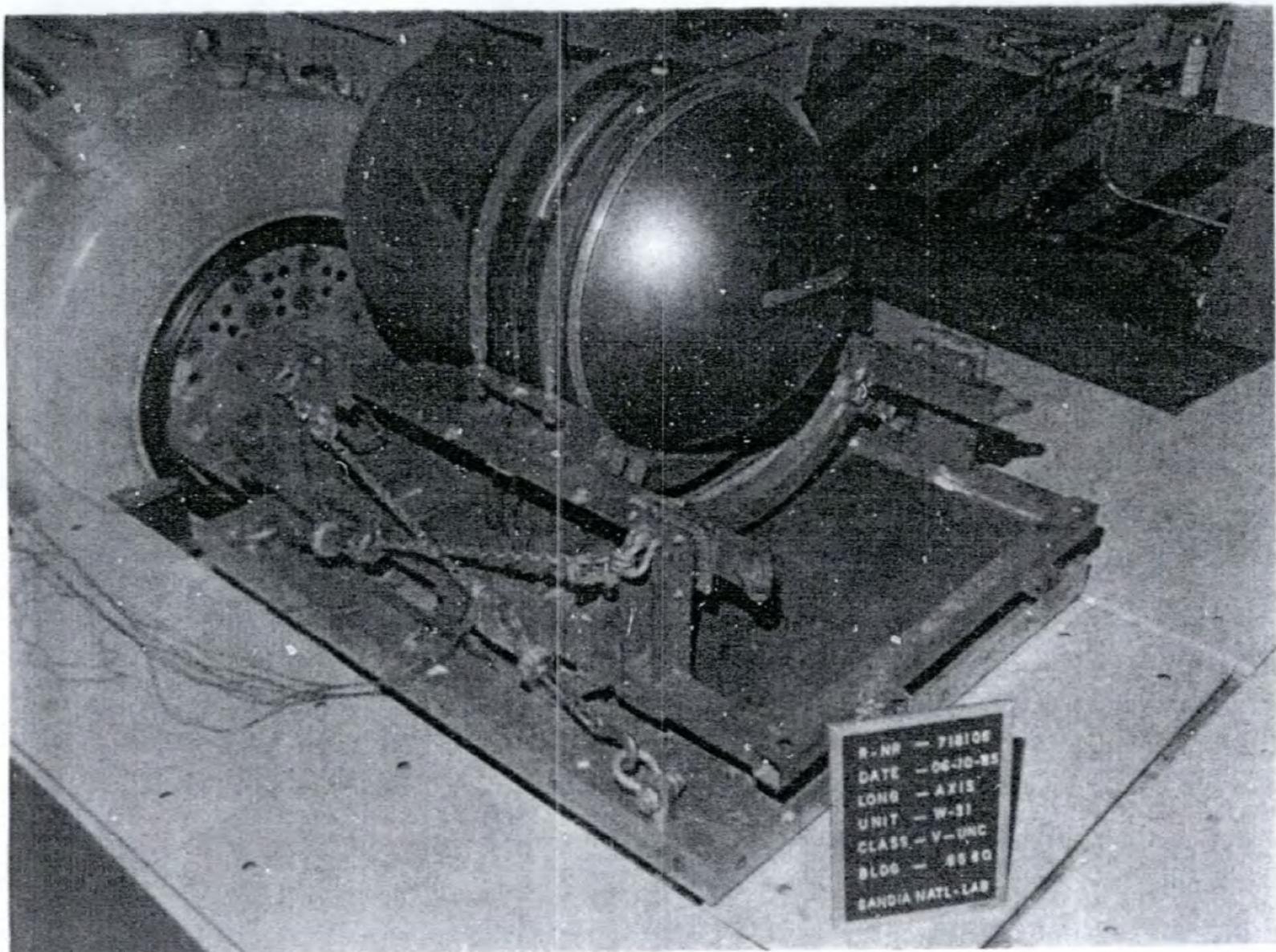


Figure 1 - Truck Vibration - Longi. - axial Setup

C85-100,740  
R718106  
Unclassified

U 0 1 0 2 7

-1C-

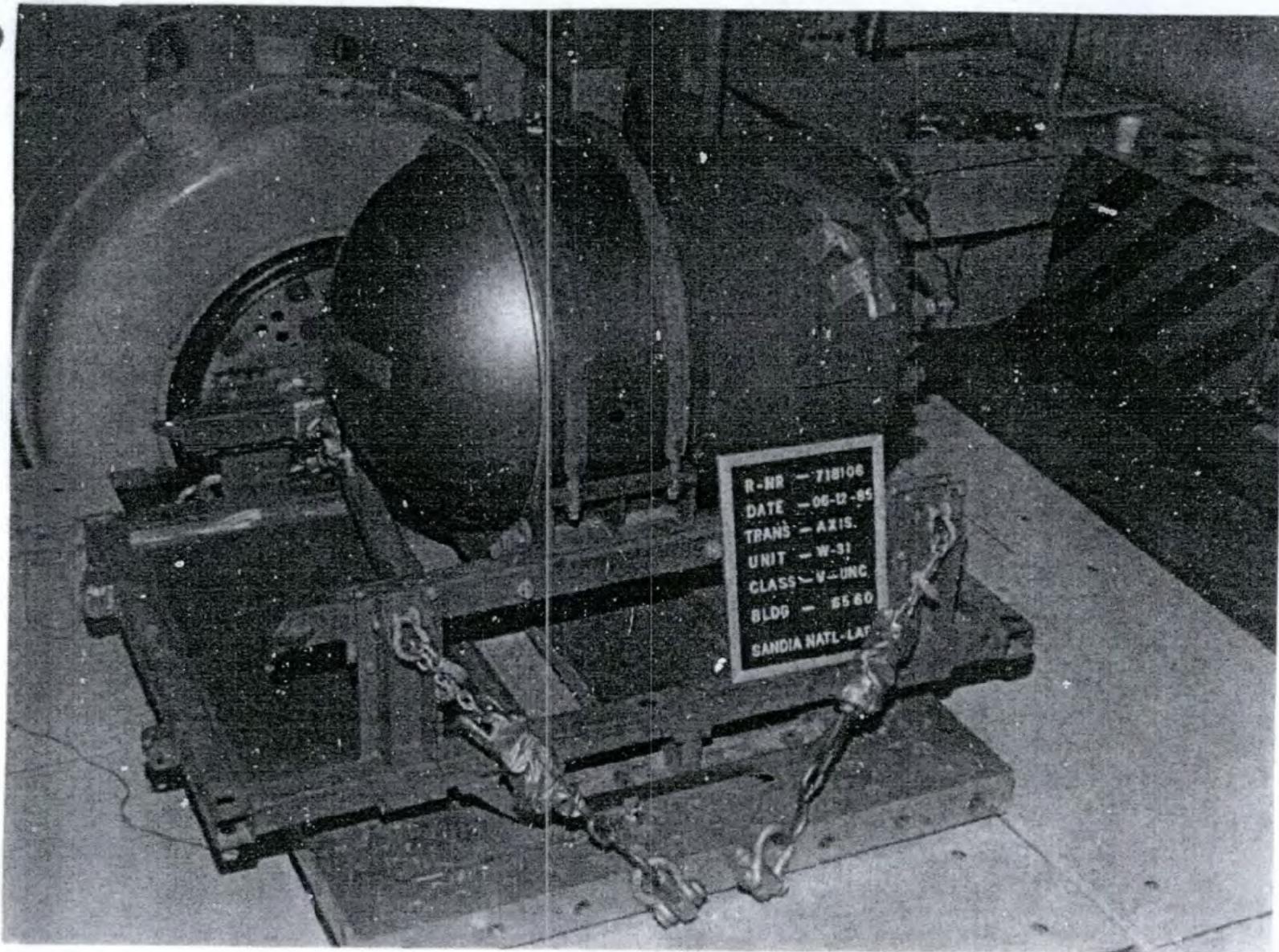


Figure 4 - Truck Vibration - Transverse Setup

CB5-100,704  
R718106  
Unclassified

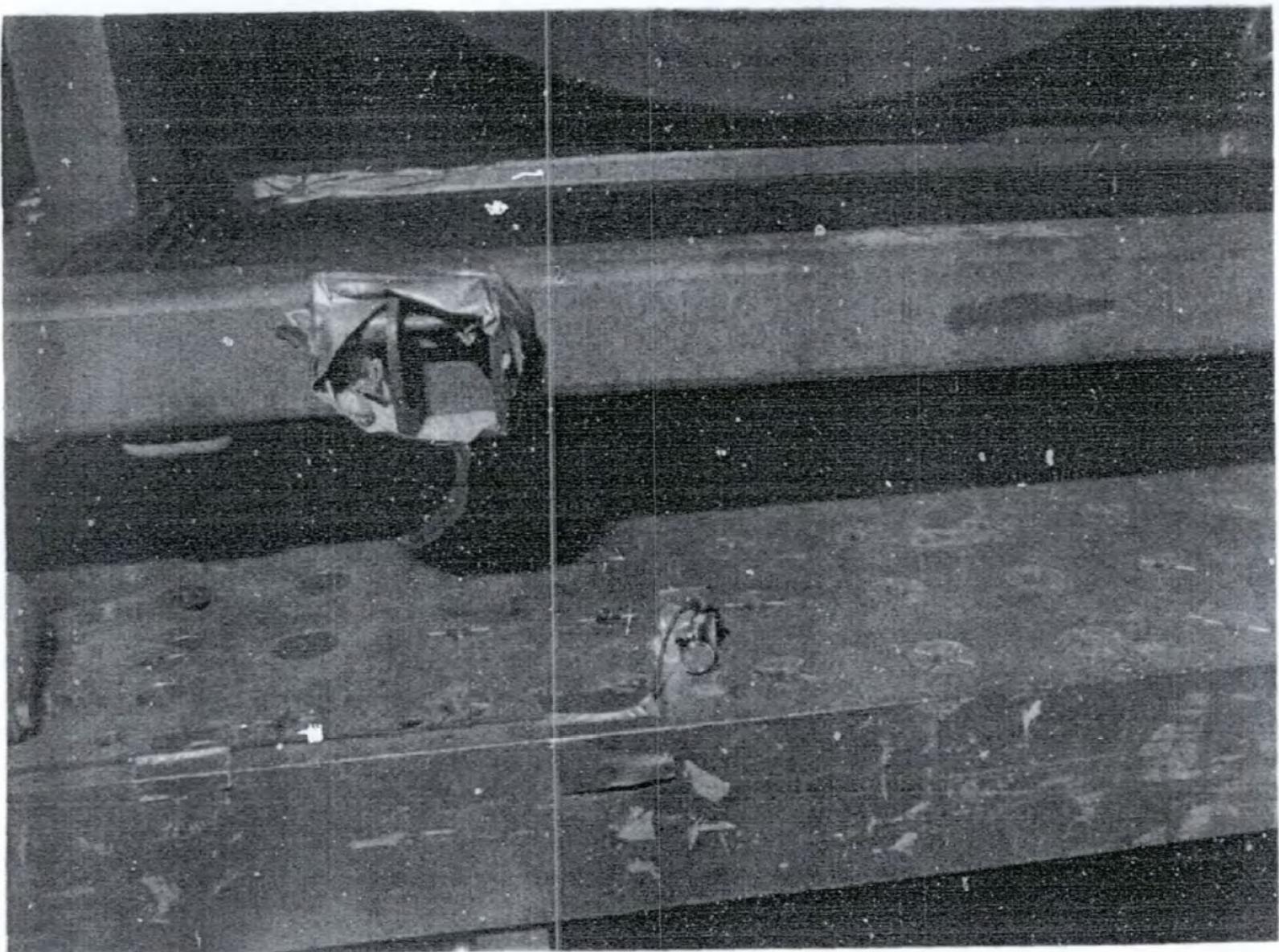


Figure 5 - Control Accelerometer for W51 Dolly Environments

085-100, 702  
8710106  
Unclassified

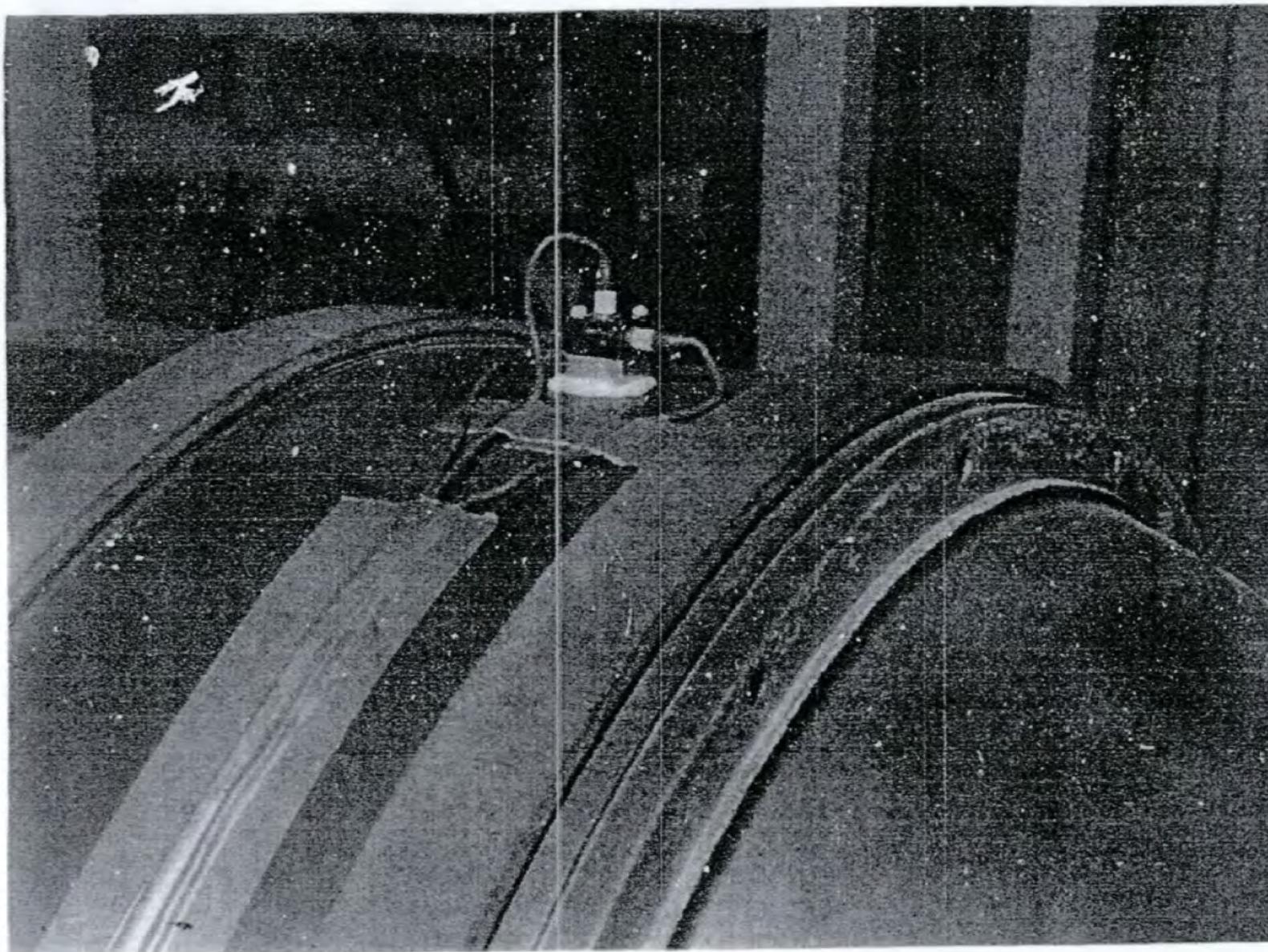


Figure 6 - Accelerometer on Top of Unit for Vibration Environments

U 0 1 0 2 9

005-100, "C"  
171810P  
Unclassified

01030

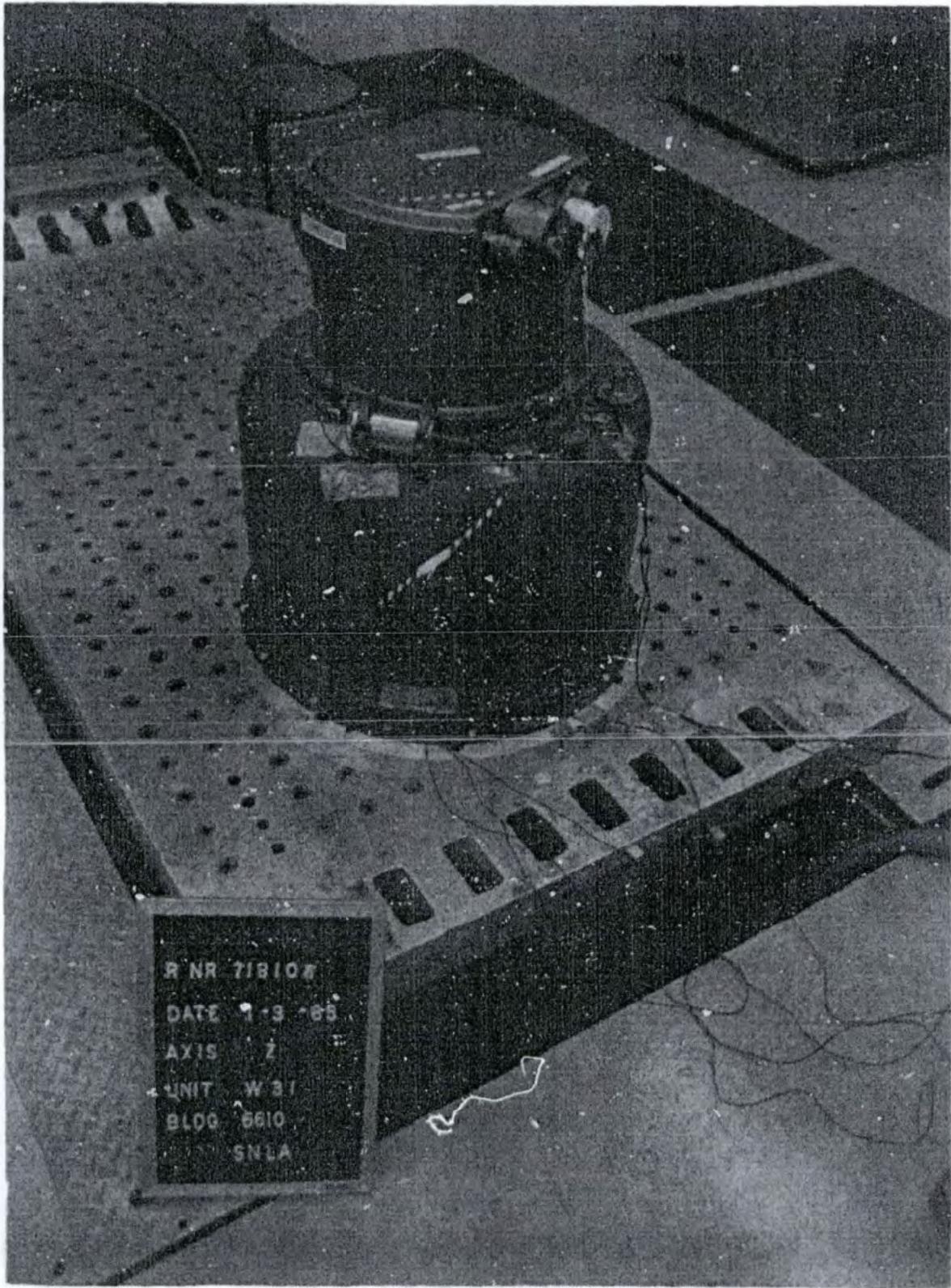
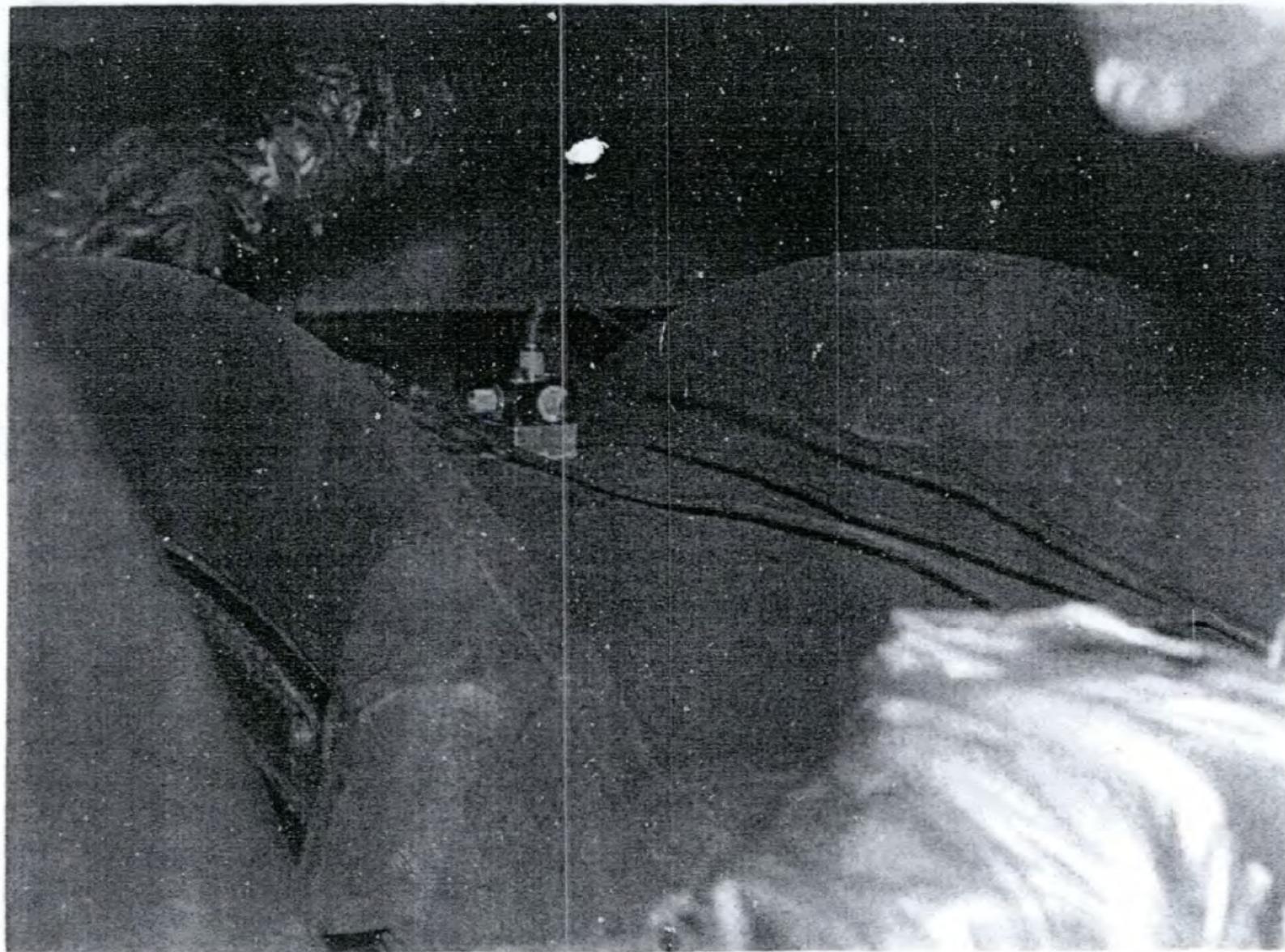


Figure 3 - Launch Vibration Test Fixture

C85-100,703  
R718106  
Unclassified



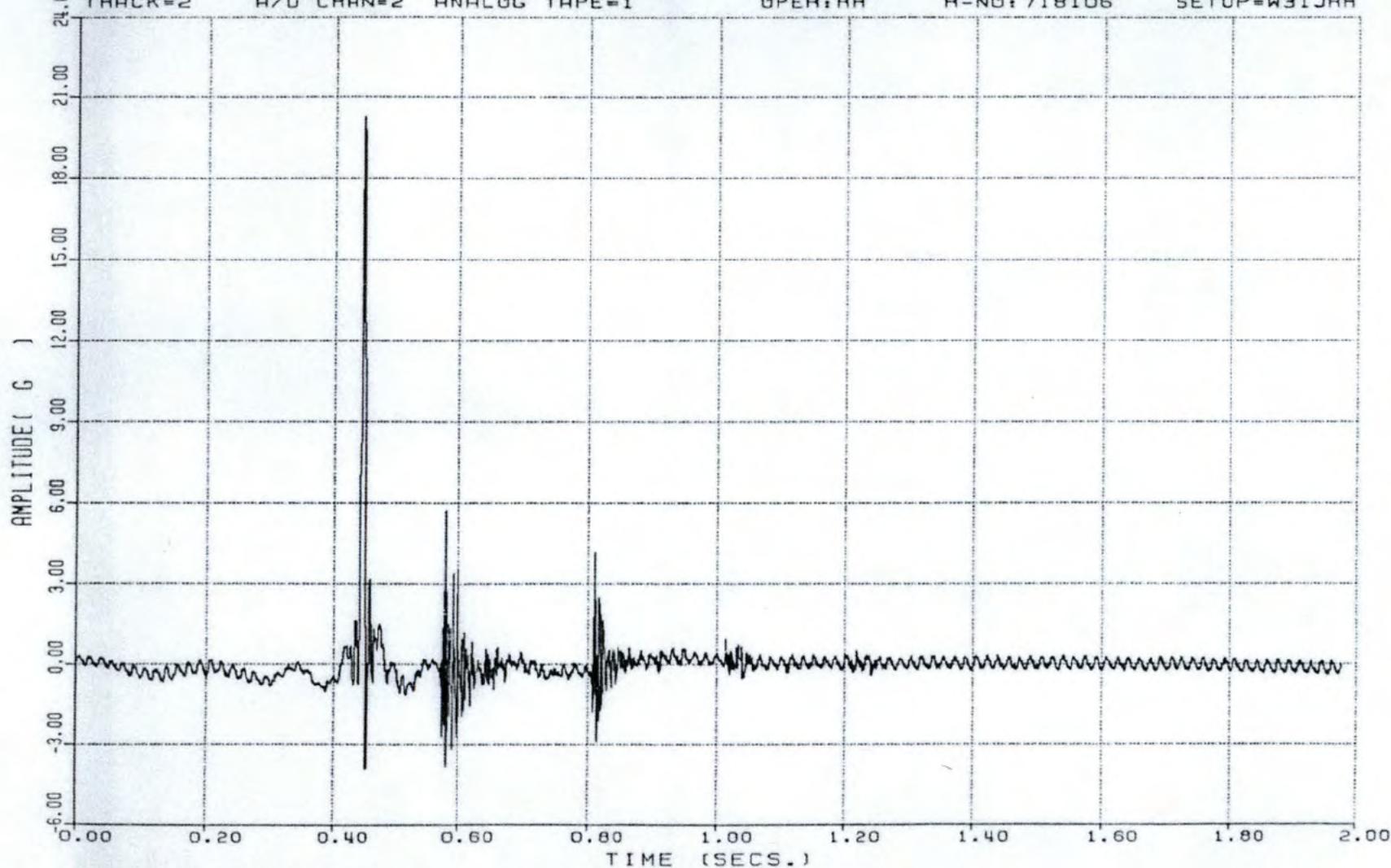
001031

Figure 7 - Accelerometer on Bot. on crnt for W31 Dolly Environments  
(picture is upside down)

SAMPLE RATE=2073.0 FILTER=400.00 # OF POINTS=4096.0

PLOTTED: 7:54 AM WED., 19 JUNE, 1985 FILE=TIMIBF

TRACK=2 A/D CHAN=2 ANALOG TAPE=1 OPER:RH R-N0:718106 SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

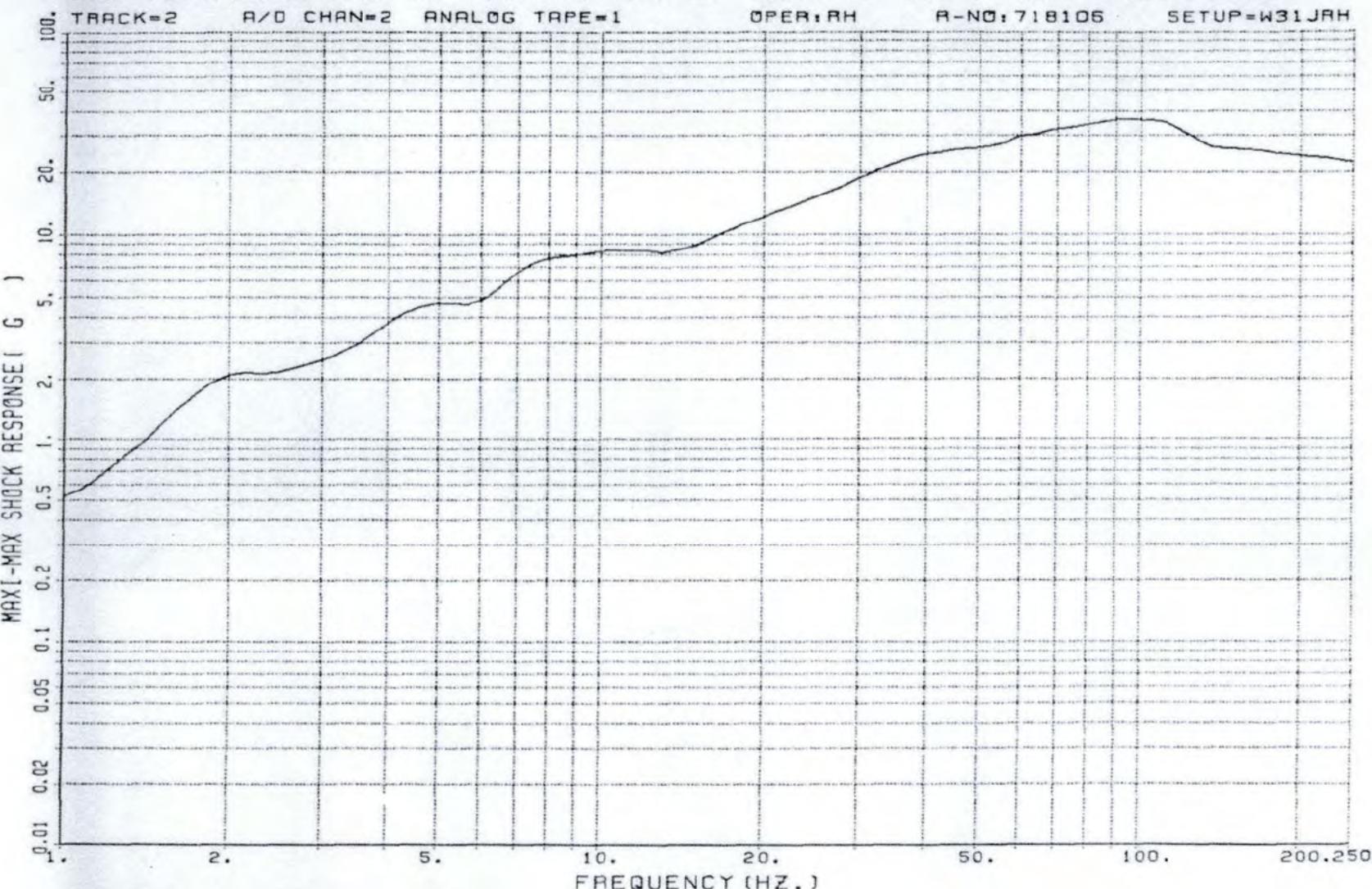
RUN INDEX:1 RUN NO:1A RUN DESC:FKLFT. TRANS. (U-LONG) RUN AXIS:LONG.

TRANS:AI INPUT CONTROL (TABLE) TRANS. AXIS:INAXIS TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE:9

SAMPLE RATE=2073.0 DAMPING=0.030 FILTER=400.0  
 # OF POINTS=1 OCTAVE =10 PLOTTED: 7:58 AM WED.. 19 JUNE. 1985 FILE=SHAM02



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1R RUN DESC:FKLFT,TRANS. (U-LONG) RUN AXIS:LONG.

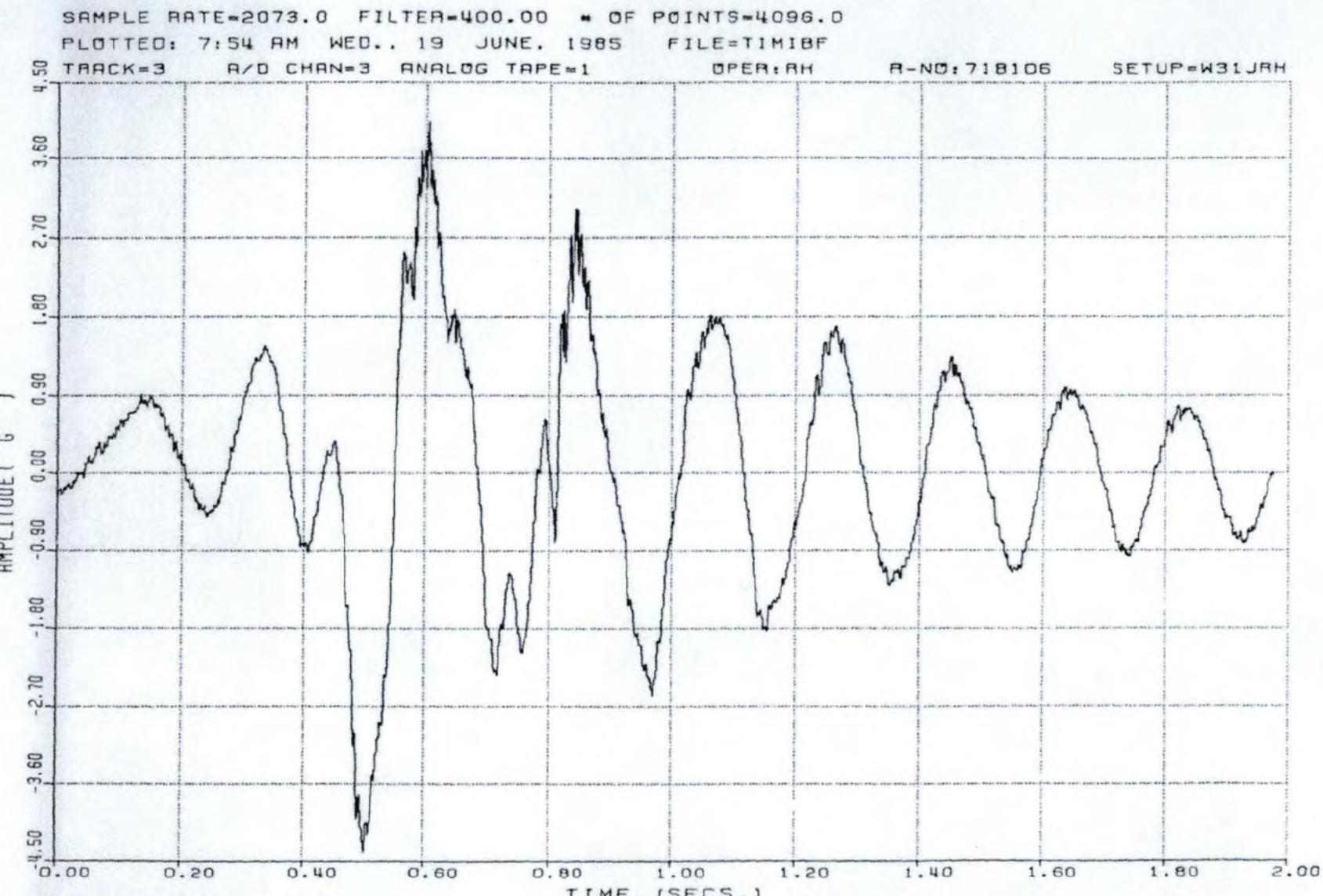
TRANS:AI INPUT CONTROL (TABLE) TRANS. AXIS:INAXIS TEST DATE:06/07/85

TEST DURATION:&lt;1SEC. TEST TEMP:ROOM

FIGURE: 10

001033

24

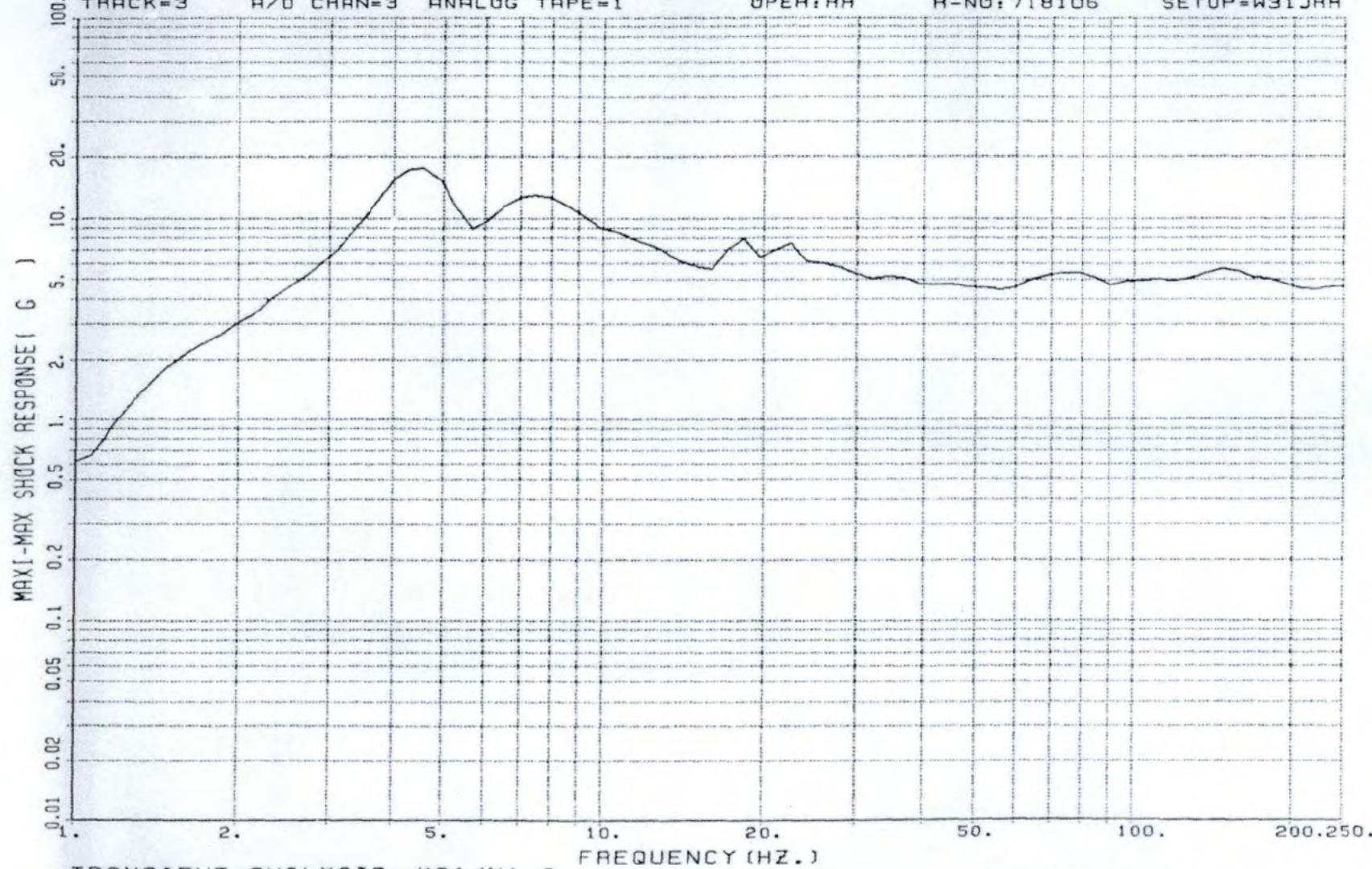


TRANSIENT ANALYSIS: W31/Y1-3  
RUN INDEX:1 RUN NO:1R RUN DESC:FKLFT. TRANS. (U-LONG) RUN AXIS:LONG.  
TRANS:A1 RESP. (TOP OF UNIT) TRANS. AXIS:LONG. TEST DATE:06/07/85  
TEST DURATION:<1SEC. TEST TEMP:ROOM FIGURE: 11

SAMPLE RATE=2073.0 DAMPING=0.030 FILTER=400.0

# OF POINTS=1 OCTAVE =10 PLOTTED: 7:58 AM WED., 19 JUNE, 1985 FILE=SHRM03

TRACK=3 R/D CHAN=3 ANALOG TRPE=1 OPER:RH R-NO:718106 SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A RUN DESC:FKLFT. TRANS. (U-LONG) RUN AXIS:LONG.

TRANS:A1 RESP. (TOP OF UNIT) TRANS. AXIS:LONG. TEST DATE:06/07/85

TEST DURATION:&lt;1SEC. TEST TEMP:ROOM

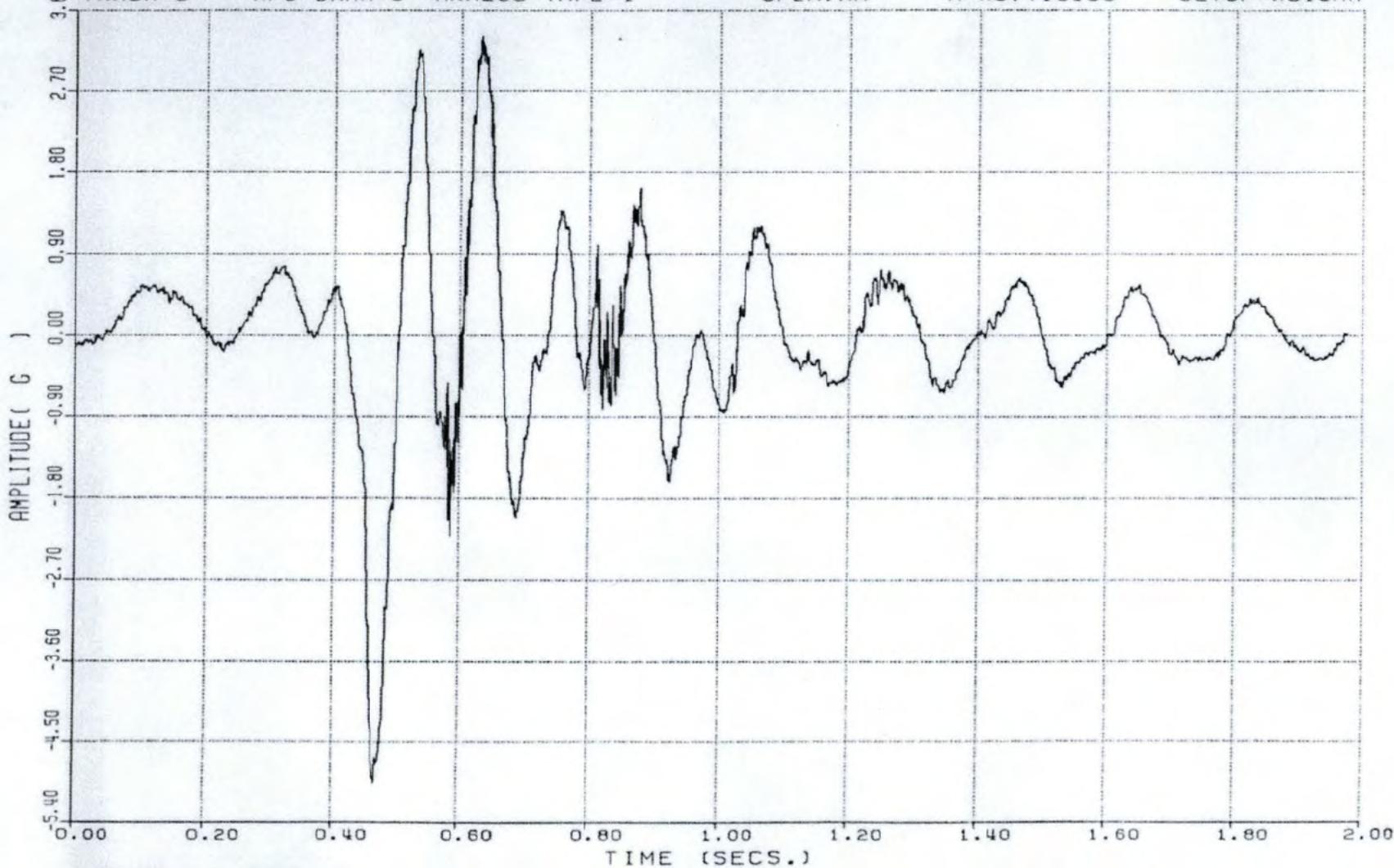
FIGURE: 12

001035

SAMPLE RATE=2073.0 FILTER=400.00 # OF POINTS=4096.0

PLOTTED: 7:54 AM WED.. 19 JUNE. 1985 FILE=TIMIBF

TRACK=6 R/D CHAN=6 ANALOG TAPE=1 OPER:RH R-NO:718106 SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A RUN DESC:FKLFT. TRANS. (U-LONG) RUN AXIS:LONG.

TRANS:A4 RESP. (BOTTOM OF UNIT) TRANS. AXIS:LONG. TEST DATE:06/07/85

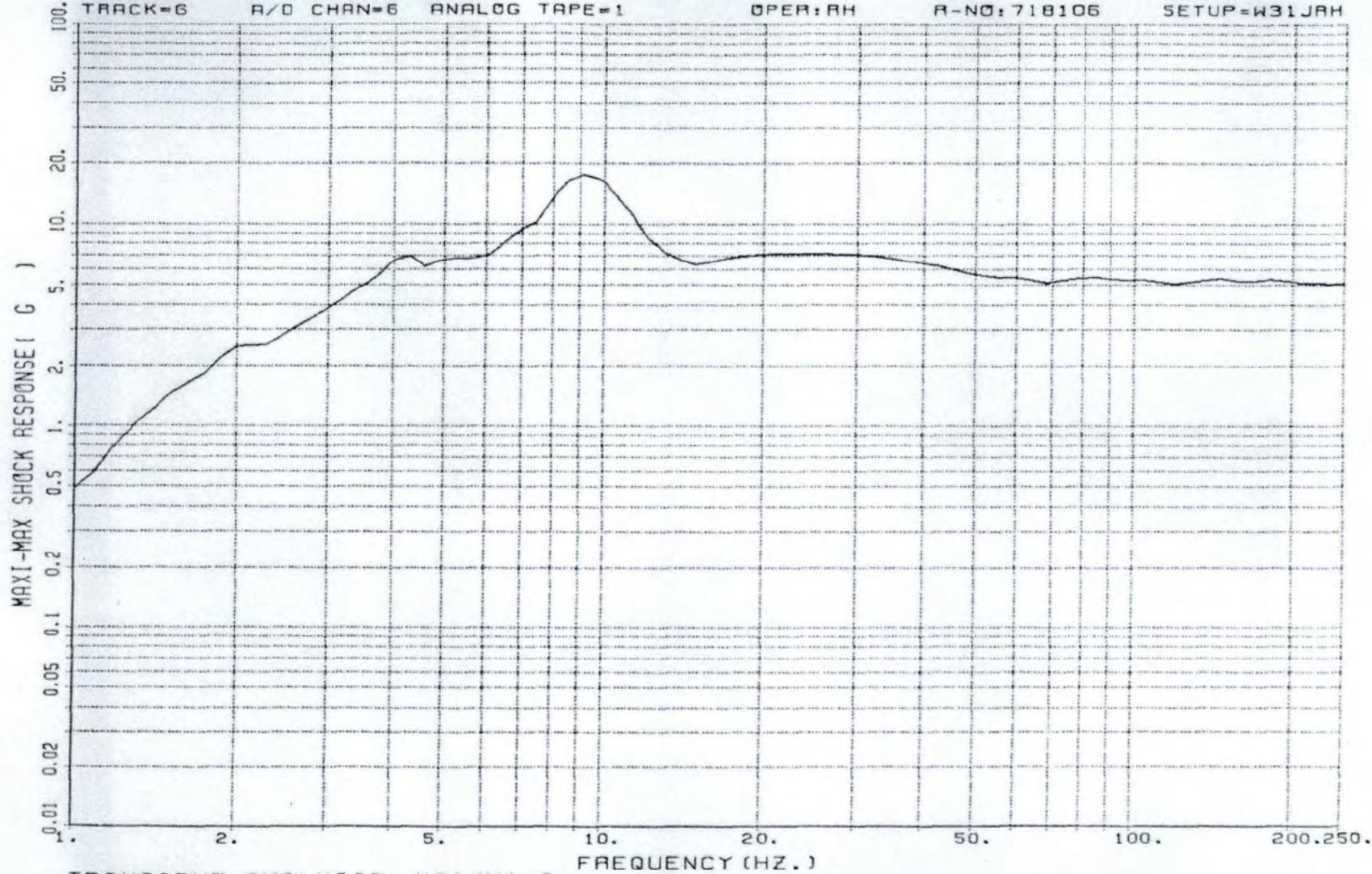
TEST DURATION:&lt;1SEC. TEST TEMP:ROOM

FIGURE: 13

SAMPLE RATE=2073.0 DAMPING=0.030 FILTER=400.0

\* OF POINTS=1 OCTAVE =10 PLOTTED: 7:58 AM WED., 19 JUNE, 1985 FILE=SHRM06

TRACK=6 A/D CHAN=6 ANALOG TAPE=1 OPER:RH R-NO:718106 SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:18 RUN DESC:FKLFT.TRANS. (U-LONG) RUN AXIS:LONG.

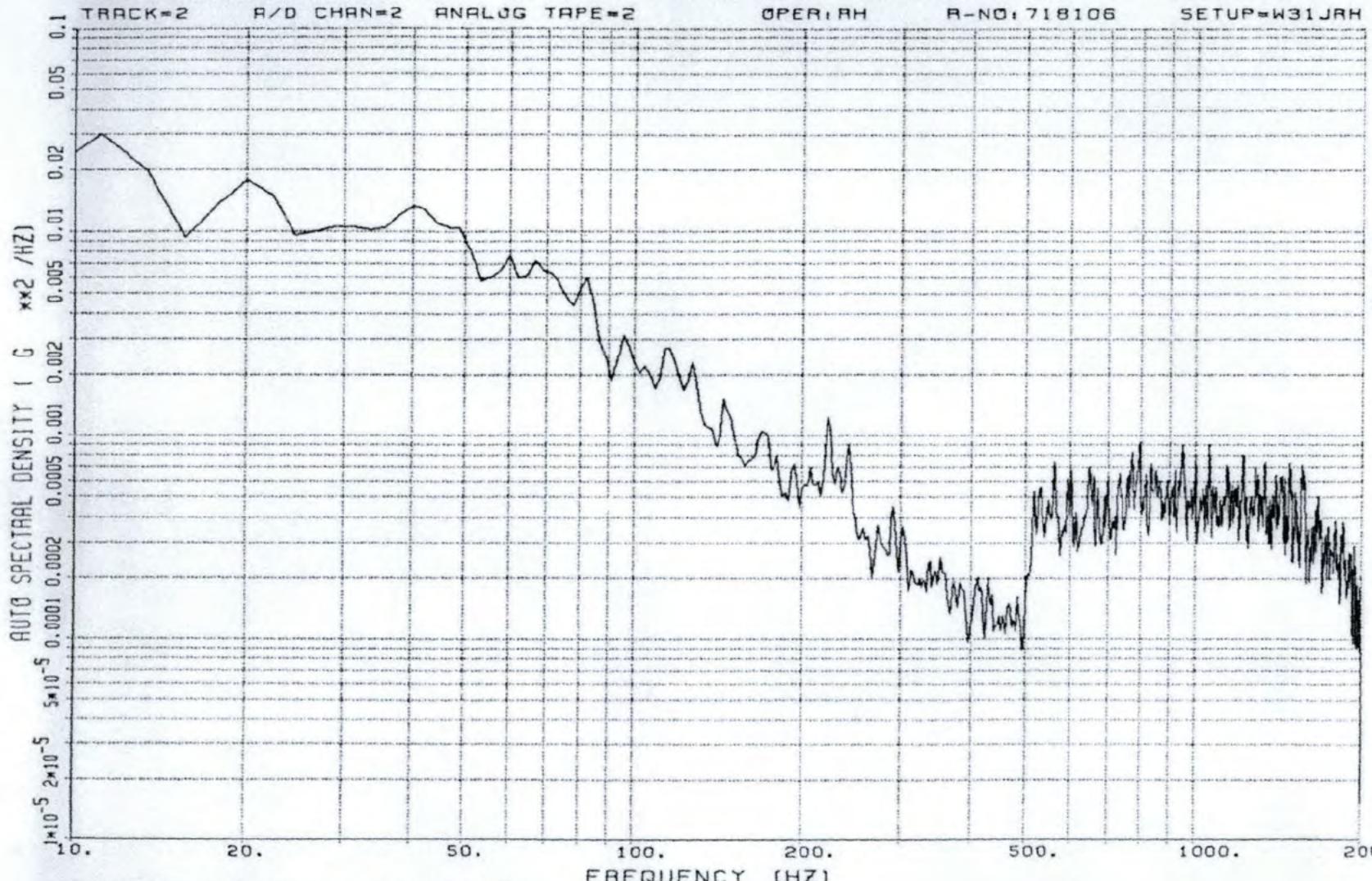
TRANS:A4 RESP. (BOTTOM OF UNIT) TRANS. AXIS:LONG. TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE: 14

ENBW=4.002 SE (%) = 15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=1.287 PLOTTED: 10:32 AM TUE. 18 JUNE. 1985 FILE=PSD102

TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:RH R-NO: 718106 SETUP=W31JRH

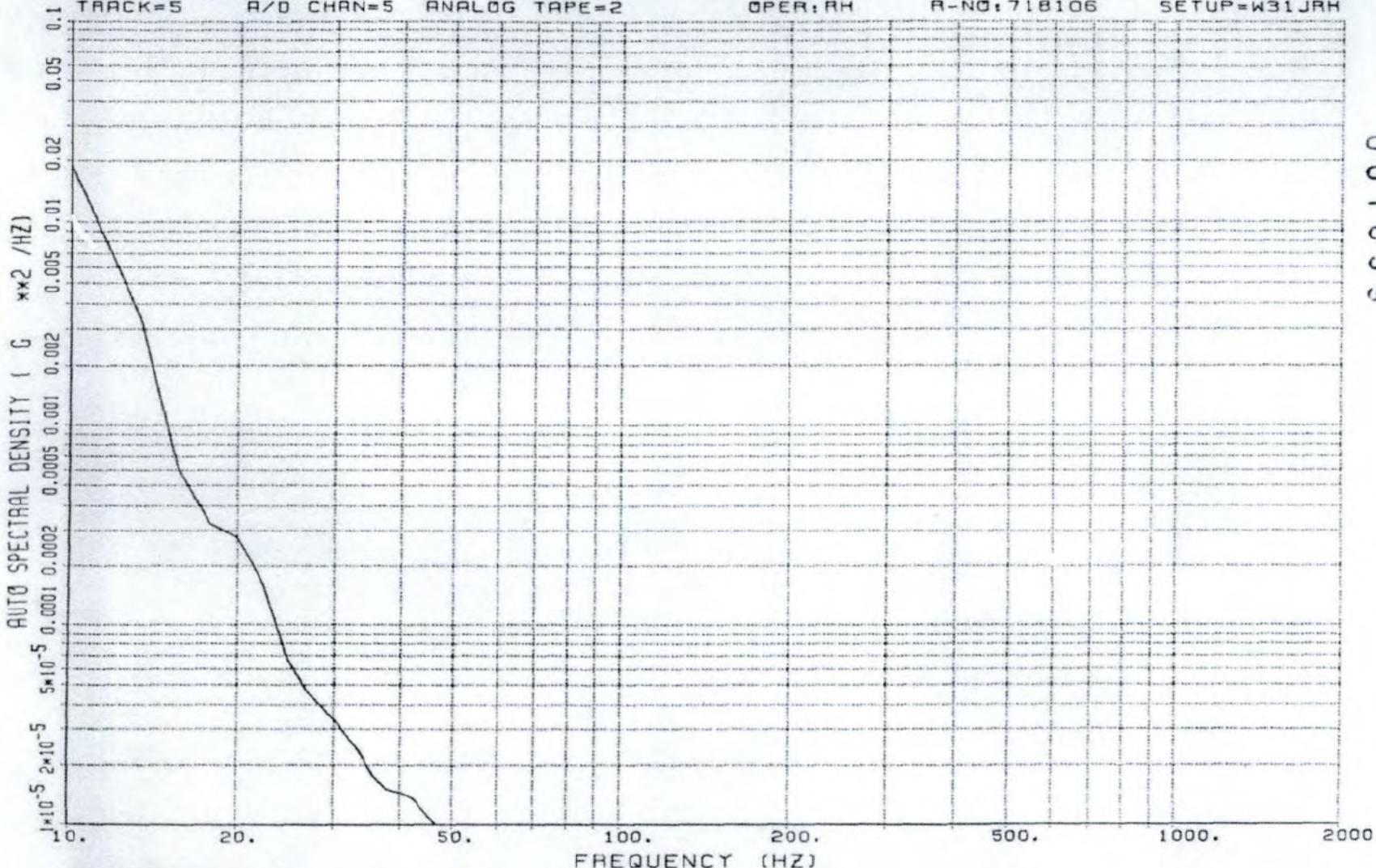


RANDOM ANALYSIS: W31/T1-3

RUN INDEX: 3 RUN NO: 2 RUN DESC: TRANSPTN, RAND, TRK. RUN AXIS: VERT.  
 TRANS: AI INPUT CONTROL (TABLE) TRANS. AXIS: IN AXIS TEST DATE: 06/10/85  
 TEST DURATION: 3HR. TEST TEMP: ROOM FIGURE: 15

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=0.562 PLOTTED:10:32 AM TUE.. 18 JUNE. 1985 FILE=PSDI05

TRACK=5 A/D CHRN=5 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:3 RUN NO:2

RUN DESC:TRANSPTN.RAND.TRK.

RUN AXIS:VERT.

TRANS:A3 RESP.(TOP OF UNIT)

TRANS. AXIS:VERT.

TEST DATE:06/10/85

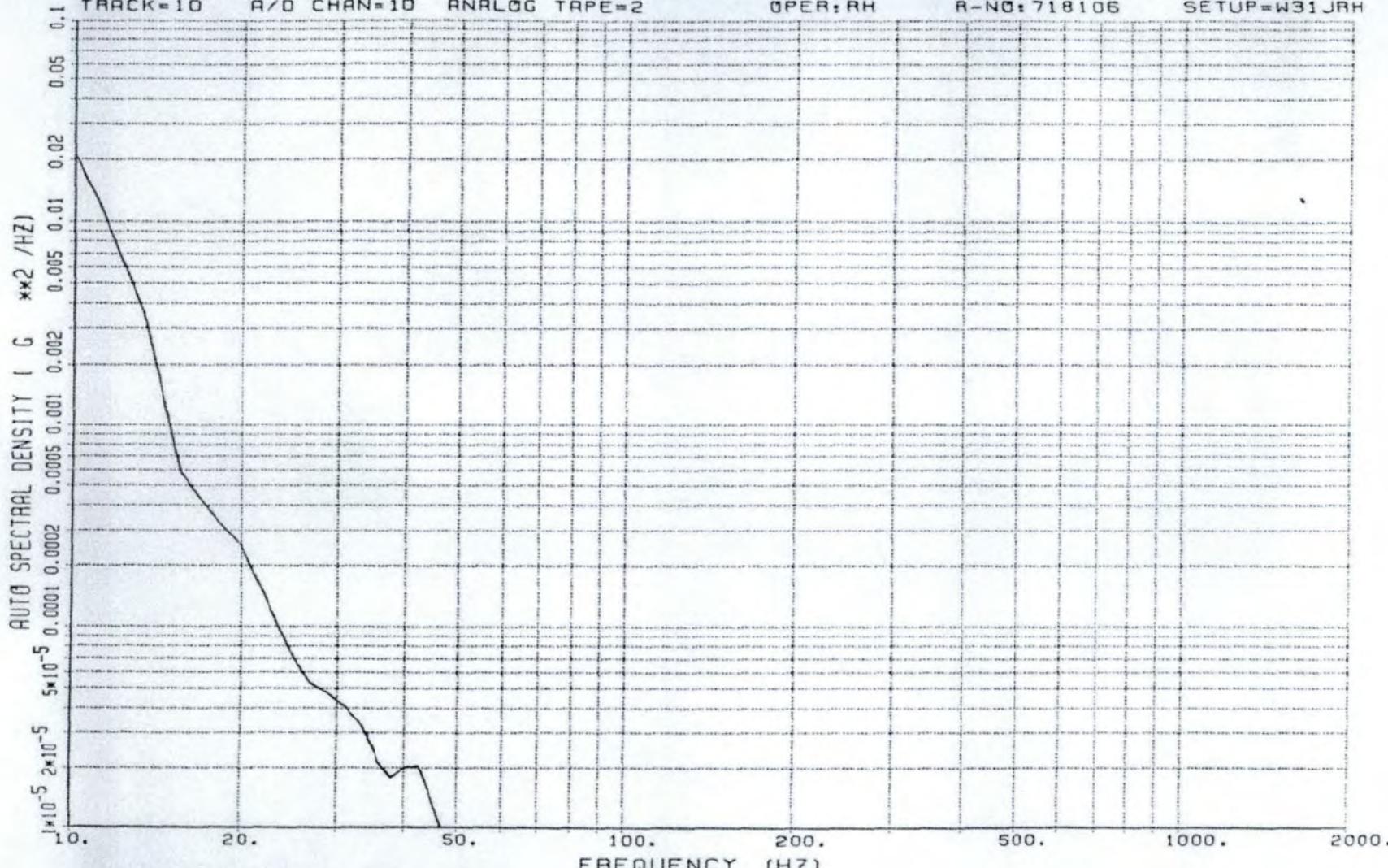
TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 16

ENBW=4.002 SE (%) =15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=0.582 PLOTTEO:10:32 AM TUE.. 18 JUNE. 1985 FILE=PSOI10  
TRACK=10 R/D CHAN=10 ANALOG TRPE=2 OPER:RH R-NO:718106 SETUP=W31JRH

040100



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:3 RUN NO:2

RUN DESC:TRANSPTN.RAND.TRK.

RUN AXIS:VERT.

TRANS:R6 RESP. (BOTTOM OF UNIT)

TRANS. AXIS:VERT.

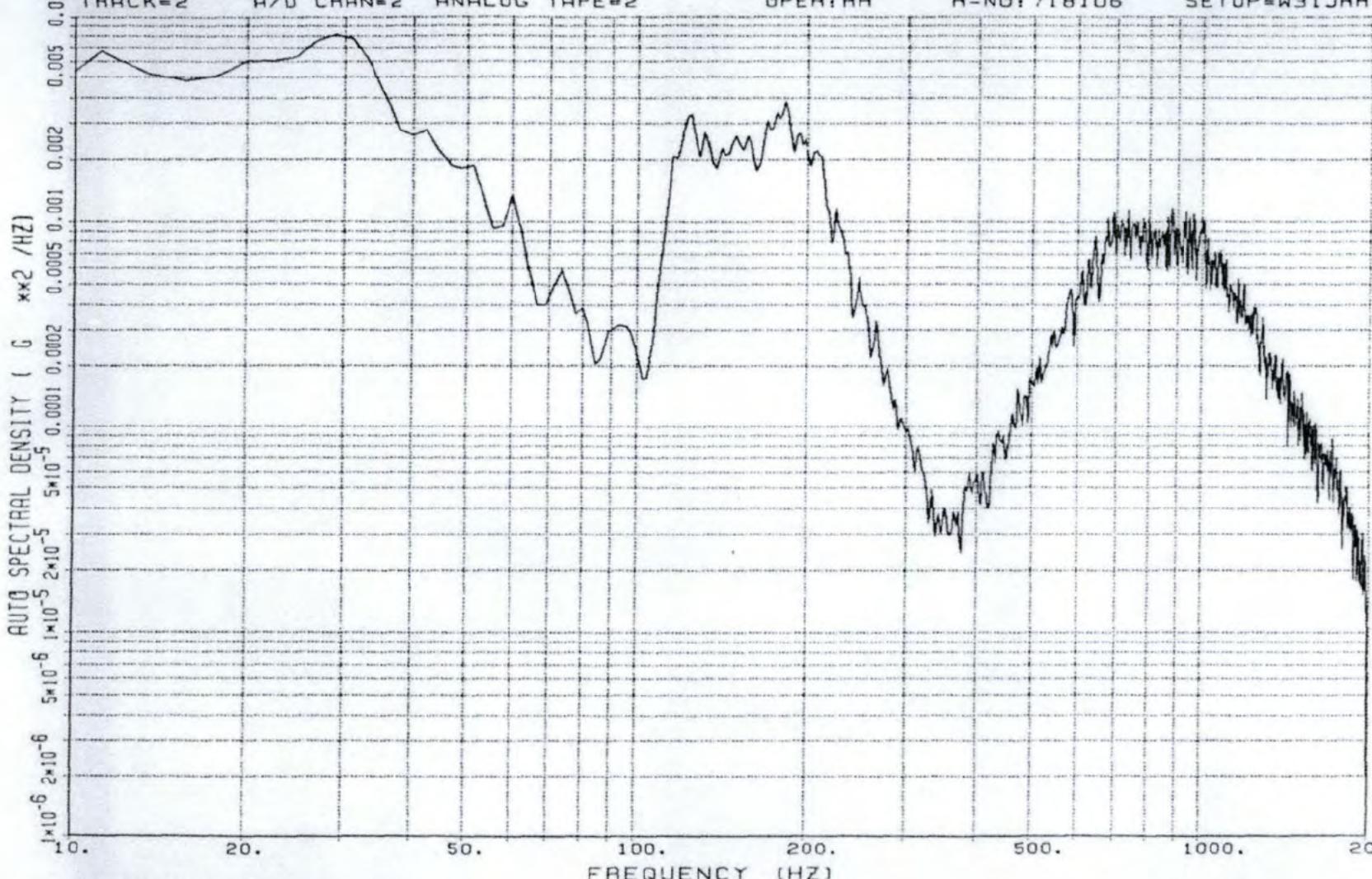
TEST DATE:06/10/85

TEST DURATION:3HR. TEST TEMP:ROOM

FIGURE: 17

ENBW=4.002 SE (%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=1.040 PLOTTED:11:12 AM TUE.. 18 JUNE. 1985 FILE=PSDJ02

TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/T1-3

RUN INDEX:4 RUN NO:3 RUN DESC:TRANSPTN.RAND.TRK. RUN AXIS:LONG.

TRANS:AI INPUT CONTROL (TABLE) TRANS. AXIS:INAXIS TEST DATE:06/11/85

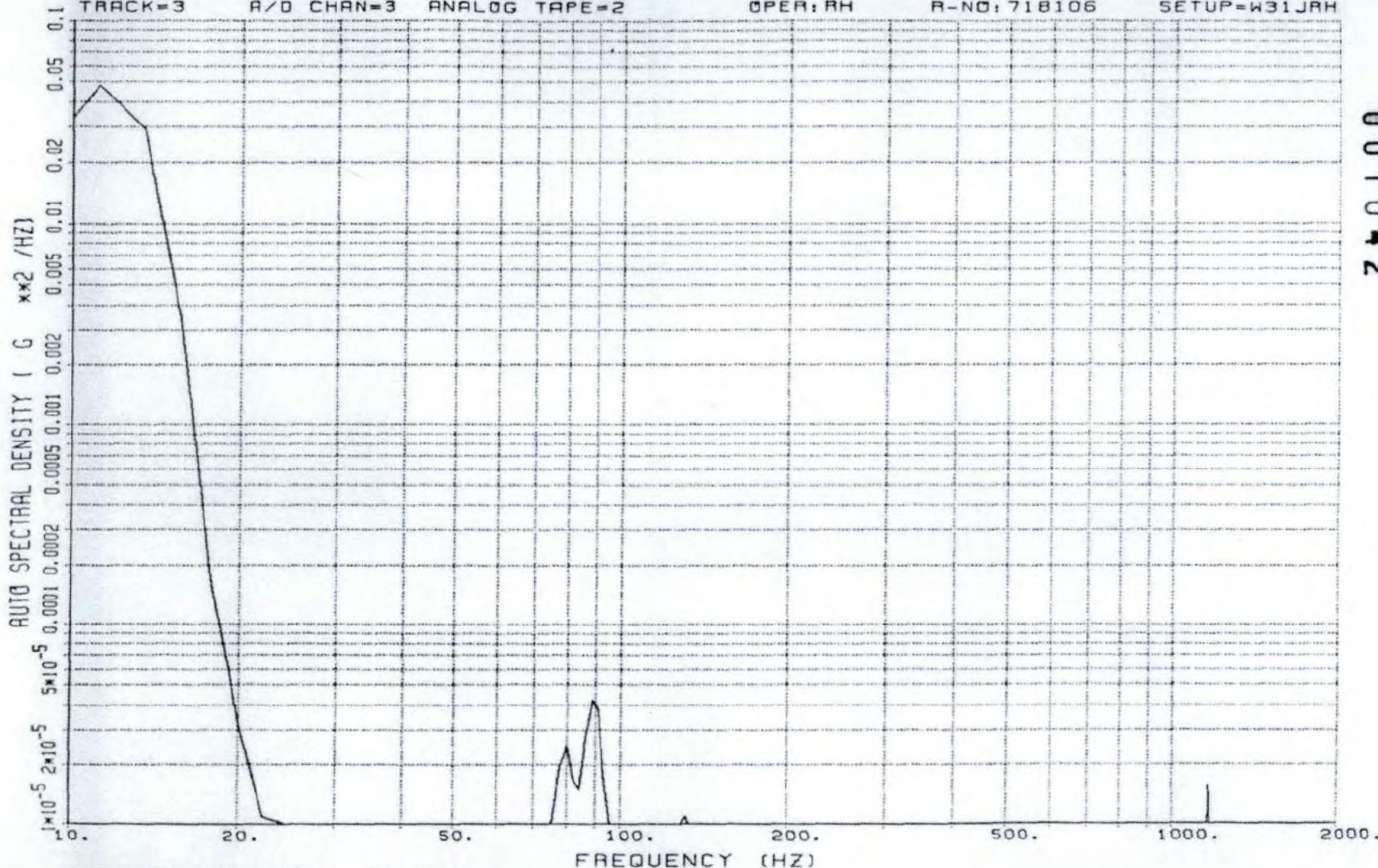
TEST DURATION:3HR. TEST TEMP:ROOM

FIGURE: 18

110100

ENBW=4.002 SE (%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=0.481 PLOTTED:11:12 RM TUE., 18 JUNE, 1985 FILE=PSD0J03

TRACK=3 A/D CHAN=3 ANALOG TAPE=2 OPER:RH R-NO: 718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:4 RUN NO:3

RUN DESC:TRANSPTN.RAND.TRK.

RUN AXIS:LONG.

TRANS:A1 RESP. (TOP OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/11/85

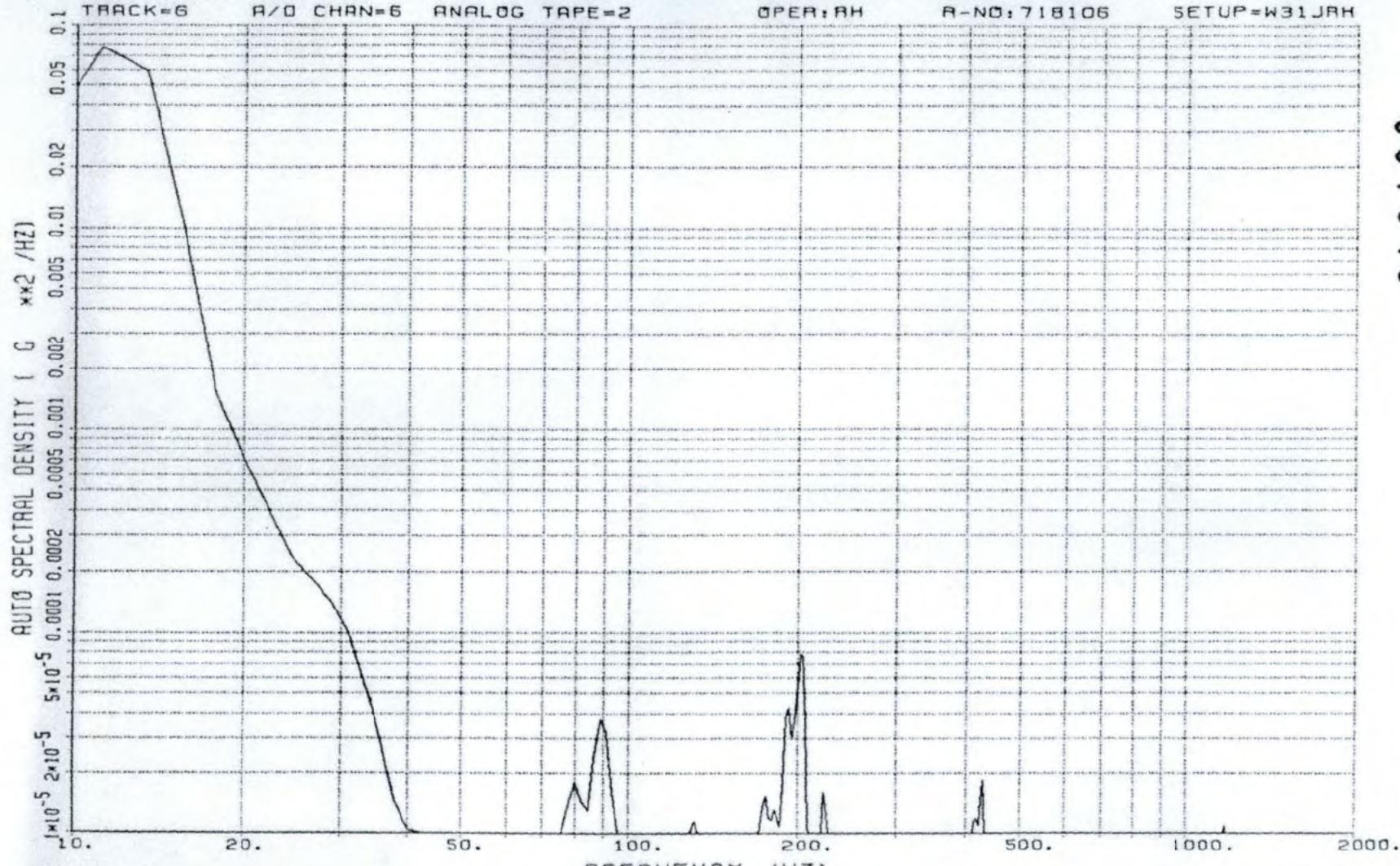
TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 19

001042

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=0.622 PLOTTED:11:12 AM TUE.. 18 JUNE. 1985 FILE=PSOJ06  
TRACK=6 A/D CHAN=6 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:4 RUN NO:3

RUN DESC:TRANSPTN.RAND.TRK.

RUN AXIS:LONG.

TRANS:A4 RESP. (BOTTOM OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/11/85

TEST DURATION:3HR.

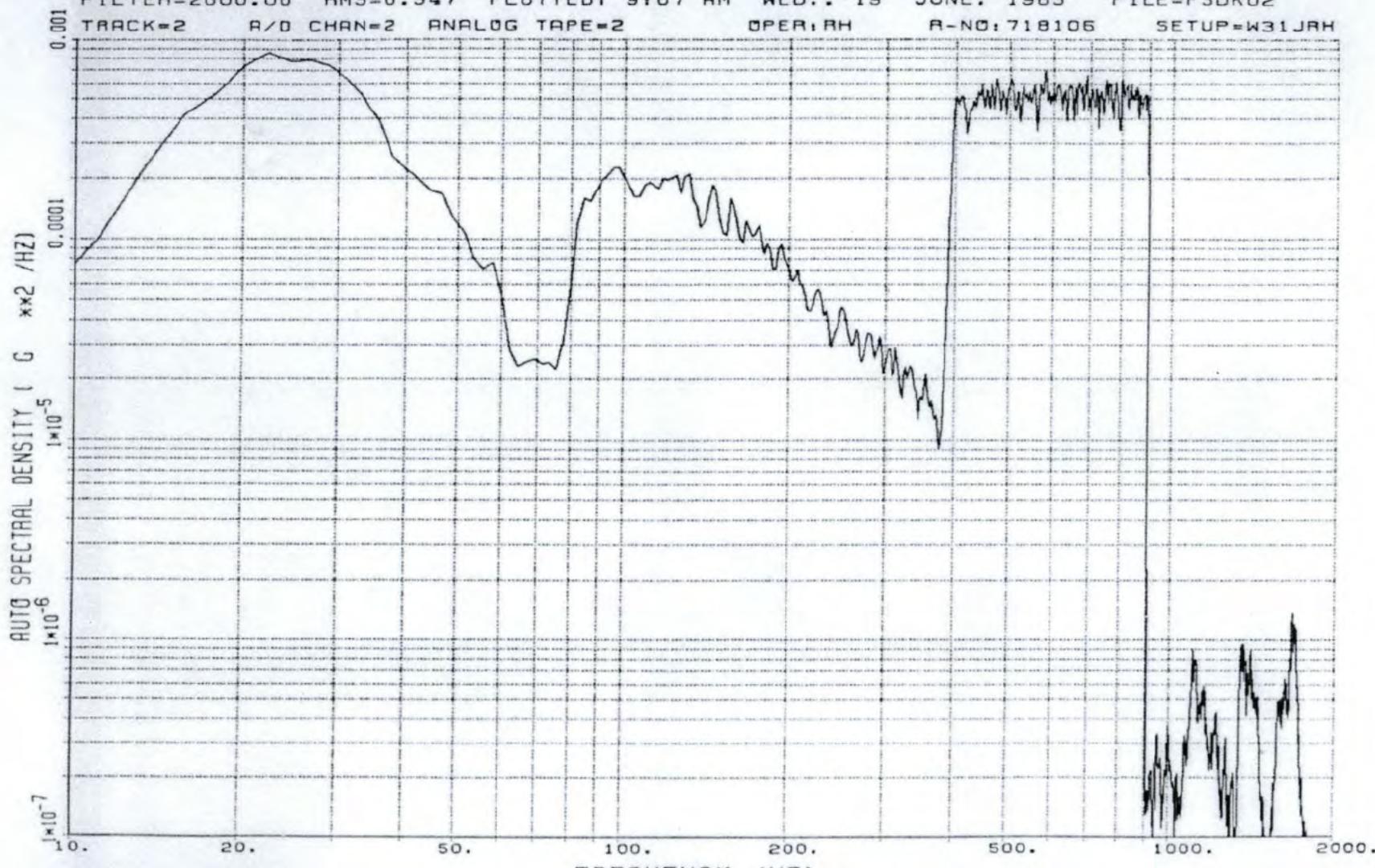
TEST TEMP:ROOM

FIGURE: 20

34 340100

ENBW=4.002 SE (%) = 15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=0.547 PLOTTED: 9:07 AM WED. 19 JUNE. 1985 FILE=PSOK02  
TRACK=2 R/D CHAN=2 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH

001044



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:5 RUN NO:4 RUN DESC:TRANSPTN.RAND.TRK. RUN AXIS:LAT.

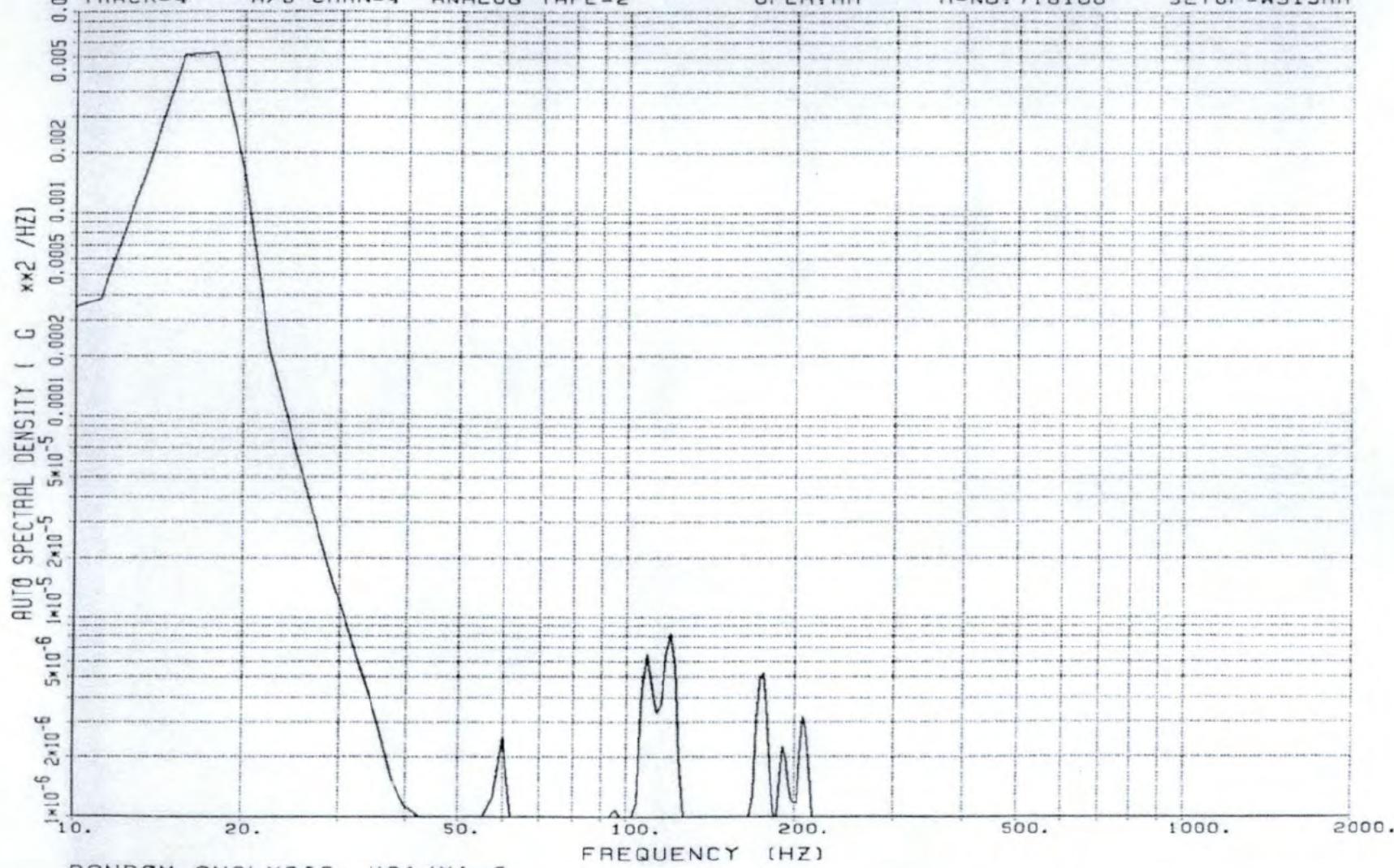
TRANS:RI INPUT CONTROL (TABLE) TRANS. AXIS:INAXIS TEST DATE:06/12/85

TEST DURATION:3HR. TEST TEMP:ROOM

FIGURE: 21

ENBW=4.002 SE (%) = 15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=0.194 PLOTTED: 9:07 AM WED., 19 JUNE, 1985 FILE=PSDK04

10 TRACK=4 R/D CHAN=4 ANALOG TAPE=2 OPER:RH R-NO: 718106 SETUP=W31 JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX: 5 RUN NO: 4

TRANS: A2 RESP. (TOP OF UNIT)

TEST DURATION: 3HR. TEST TEMP: ROOM

RUN DESC: TRANSPTN, RAND, TRK.

### TRANS. AXIS LAT.

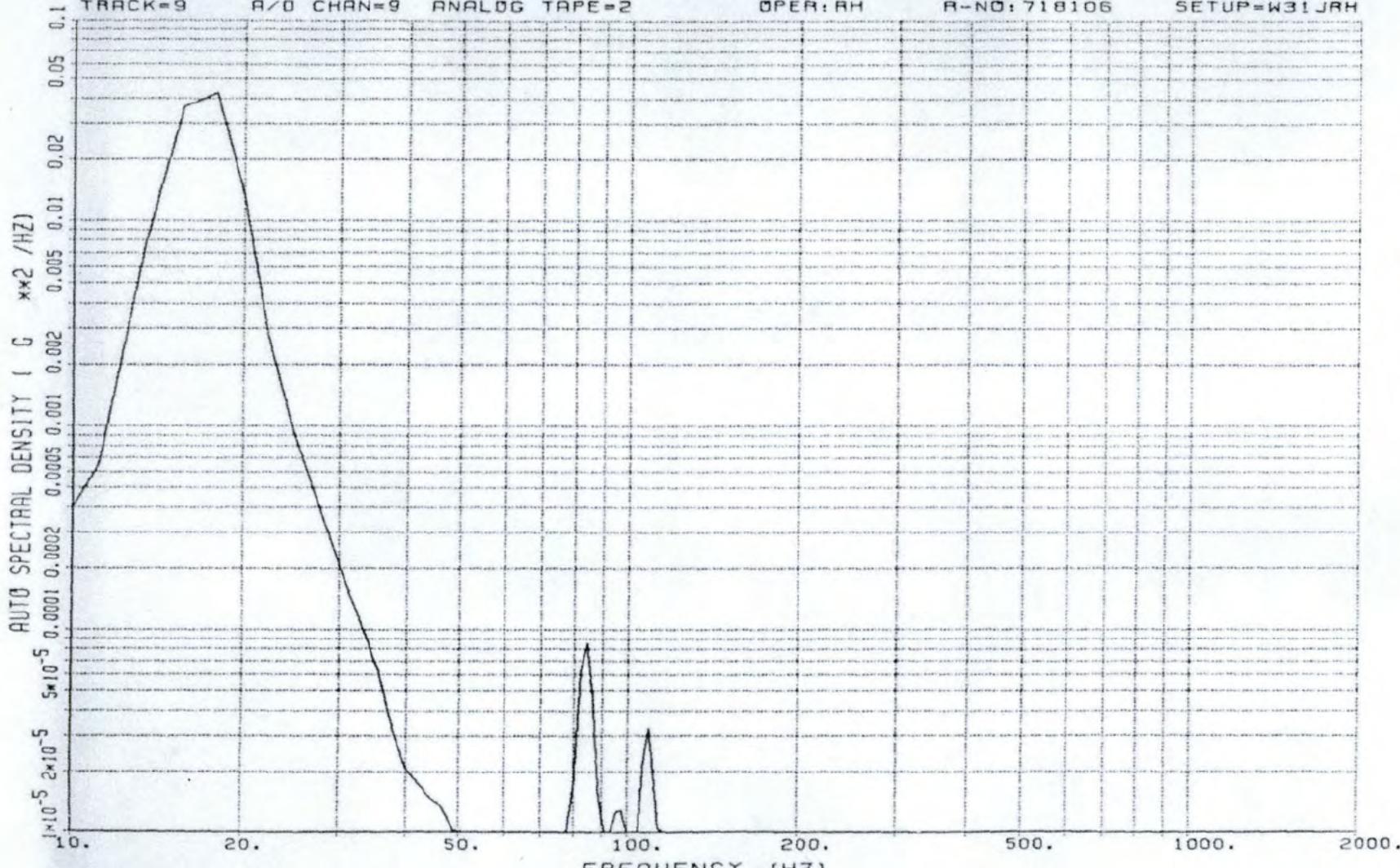
RUN AXIS: LAT.

TEST DATE: 06/12/85

FIGURE 2.2

00-045

ENBW=4.002 SE (%) = 15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096  
FILTER=2000.00 RMS=0.484 PLOTTED: 9:07 AM WED., 19 JUNE, 1985 FILE=PSOK09  
TRACK=9 A/D CHAN=9 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:5 RUN NO:4

RUN DESC:TRANSPTN.RAND.TRK.

RUN AXIS:LAT.

TRANS:AS RESP. (BOTTOM OF UNIT)

TRANS. AXIS:LAT.

TEST DATE:06/12/85

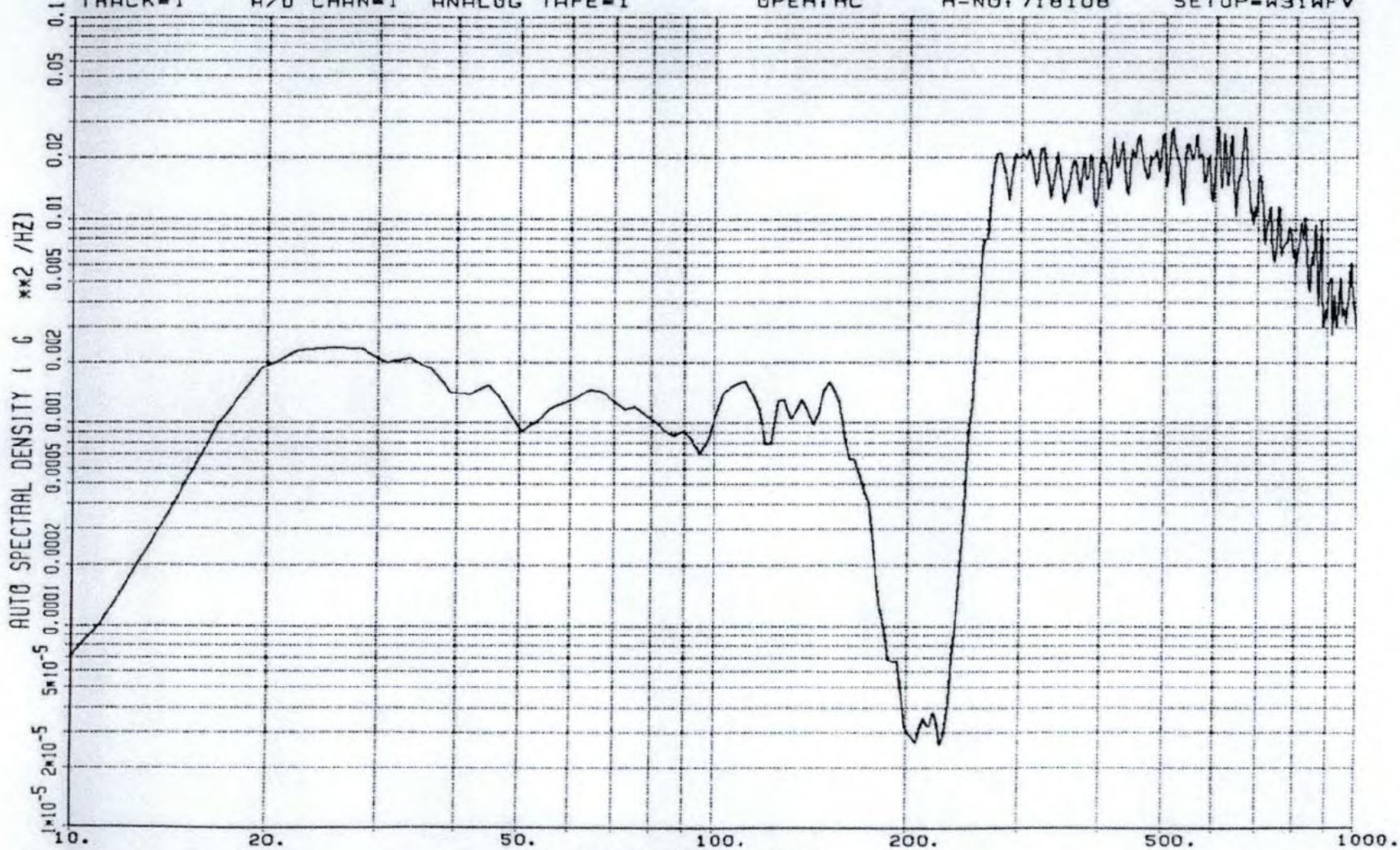
TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 23

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=3.220 PLOTTED: 7:54 AM THU., 18 JULY, 1985 FILE=PSE001

TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



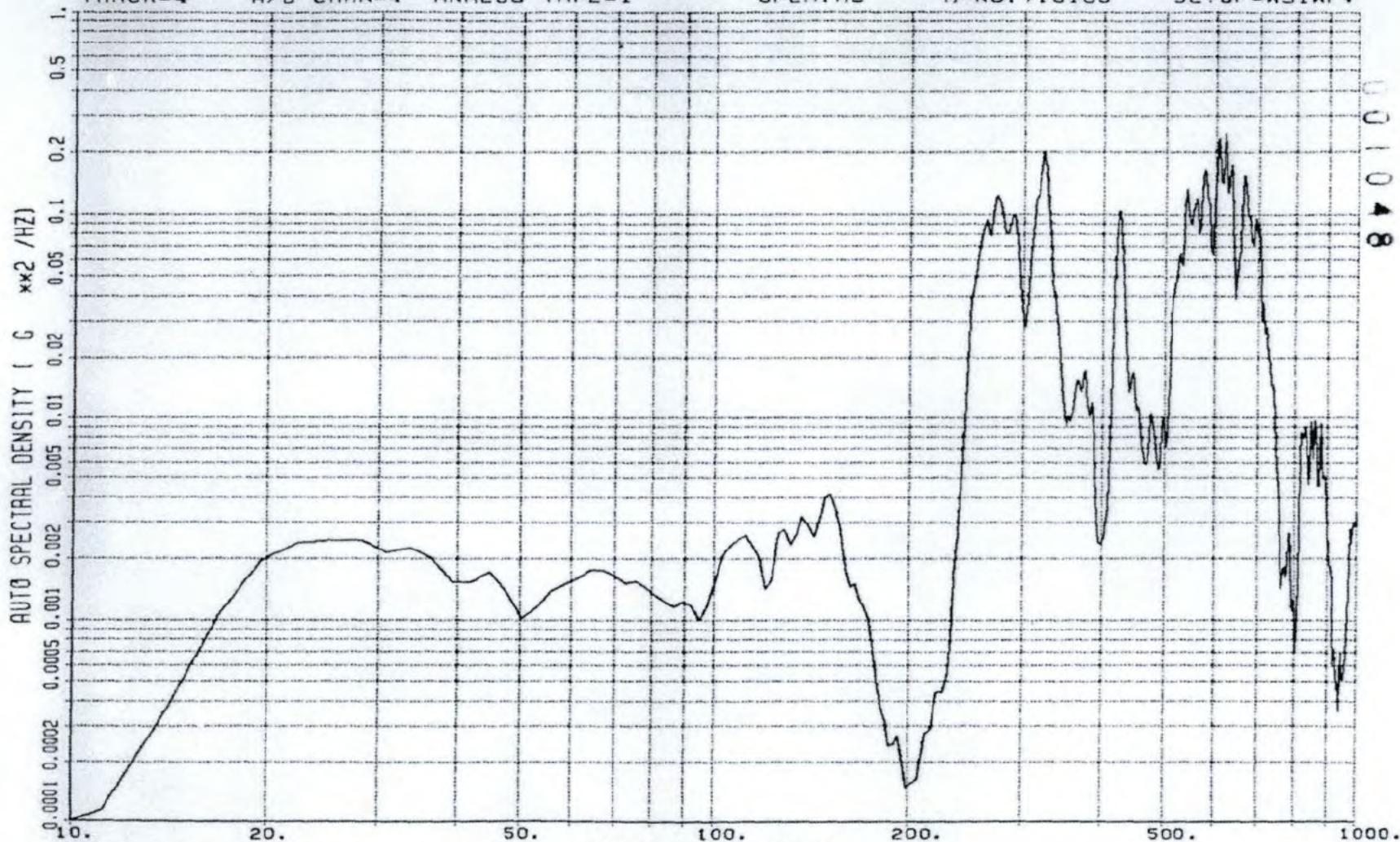
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:1 RUN NO:1 RUN DESC:TRANS. VIBRATION  
 TRANS: A1-Z CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP: ROOM

RUN AXIS:Z  
 TEST DATE:07/03/85  
 FIGURE: 24

001047

ENBW=5.034 SE (X)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
FILTER=2000.00 RMS=5.833 PLOTTED: 7:54 AM THU.. 18 JULY, 1985 FILE=PSEF04

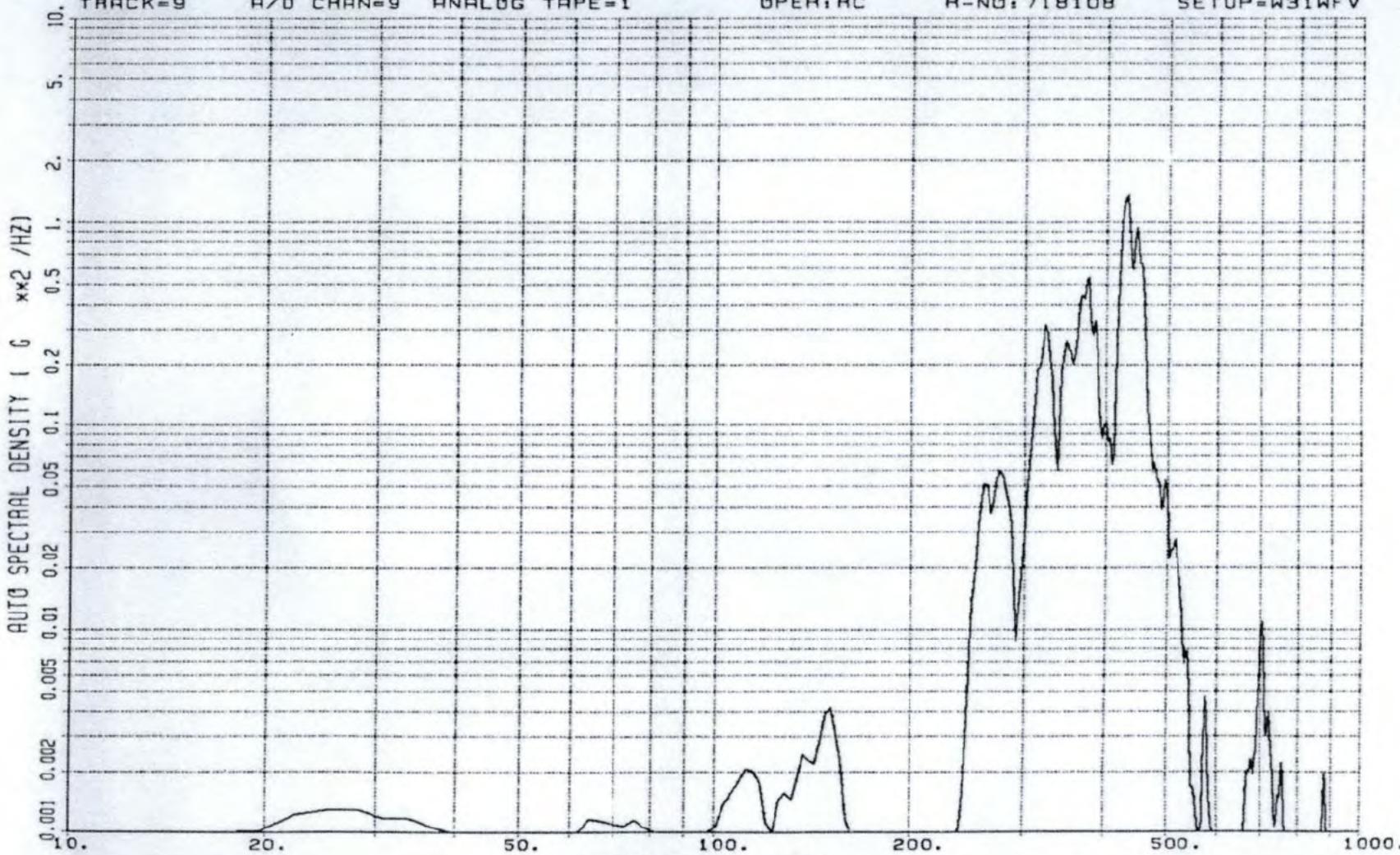
TRACK=4 A/D CHAN=4 RNALOG TRAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
RUN INDEX:1 RUN NO:1 RUN DESC:TRANS. VIBRATION  
TRANS:AU-Z FIRING SET HOUSING TRANS. AXIS:  
TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Z  
TEST DATE:07/03/85  
FIGURE: 25

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=8.118 PLOTTED: 7:54 AM THU.. 18 JULY. 1985 FILE=PSEF09  
 TRACK=9 R/D CHAN=9 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV

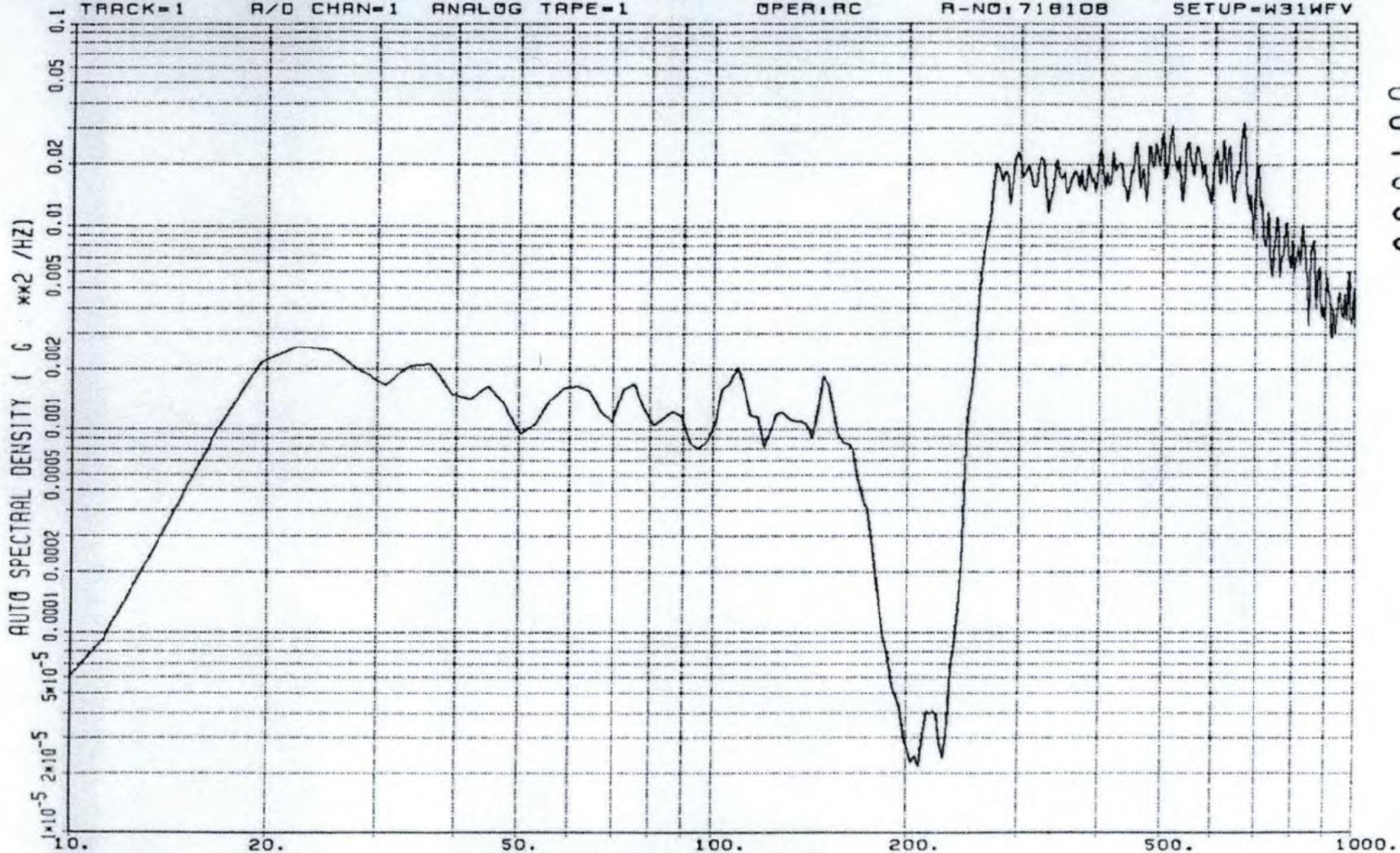


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:1 RUN NO:1 RUN DESC:TRANS. VIBRATION  
 TRANS: A9-Z MC3761 TRANS. AXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: ROOM

RUN AXIS:Z  
 TEST DATE: 07/03/85  
 FIGURE: 26

640100

ENBW=5.034 SE (%) = 17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=3.240 PLOTTED: 10:33 AM THU., 18 JULY, 1985 FILE=PSEF01  
 TRACK=1 R/D CHAN=1 ANALOG TRPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



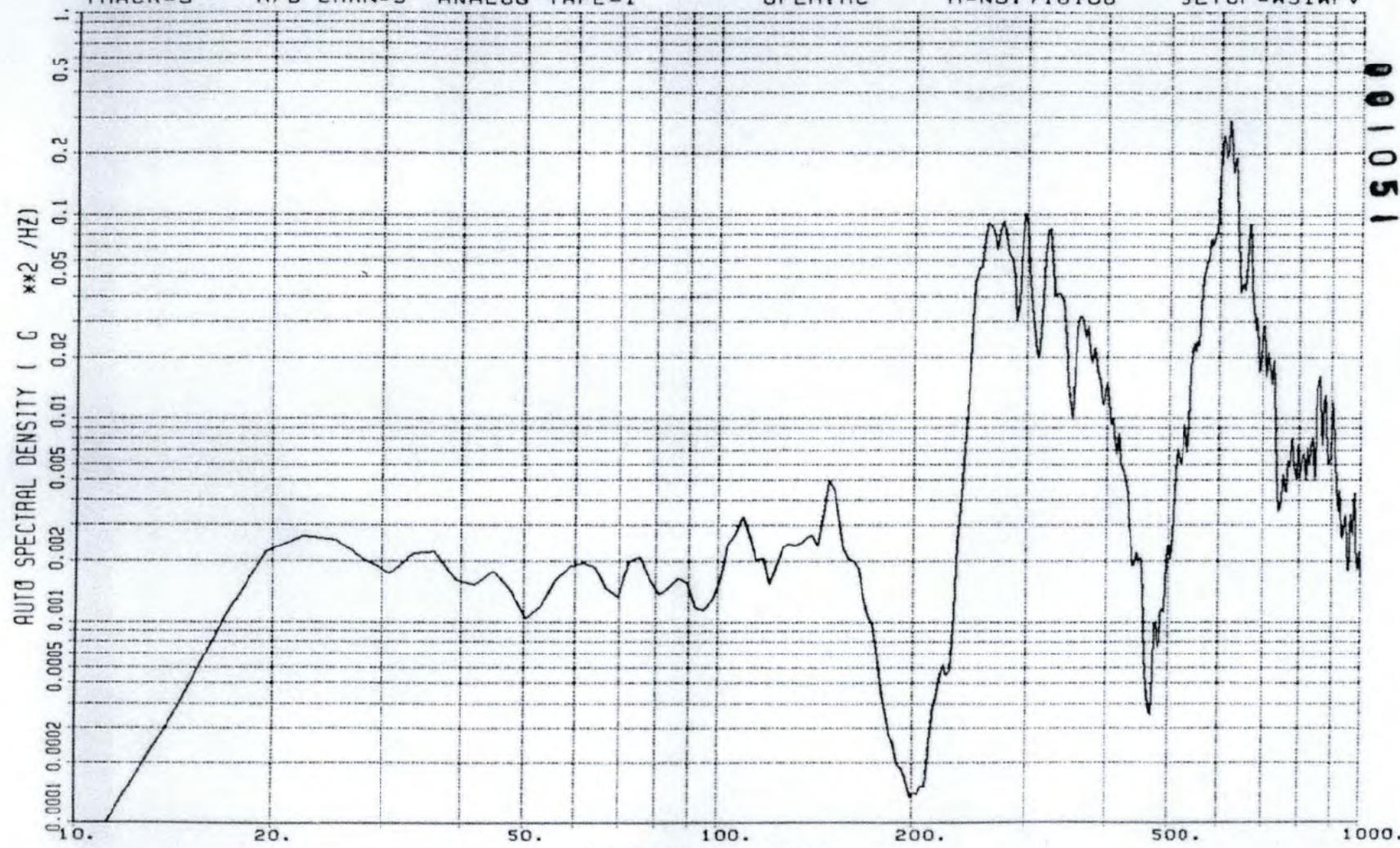
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:2 RUN NO:2 RUN DESC:VERT. VIBRATION  
 TRANS: A1-Y CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP: ROOM

RUN AXIS: Y  
 TEST DATE: 07/03/85  
 FIGURE: 27

0001050

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=4.934 PLOTTED:10:33 AM THU., 18 JULY, 1985 FILE=PSEG03  
 TRACK=3 R/D CHAN=3 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV

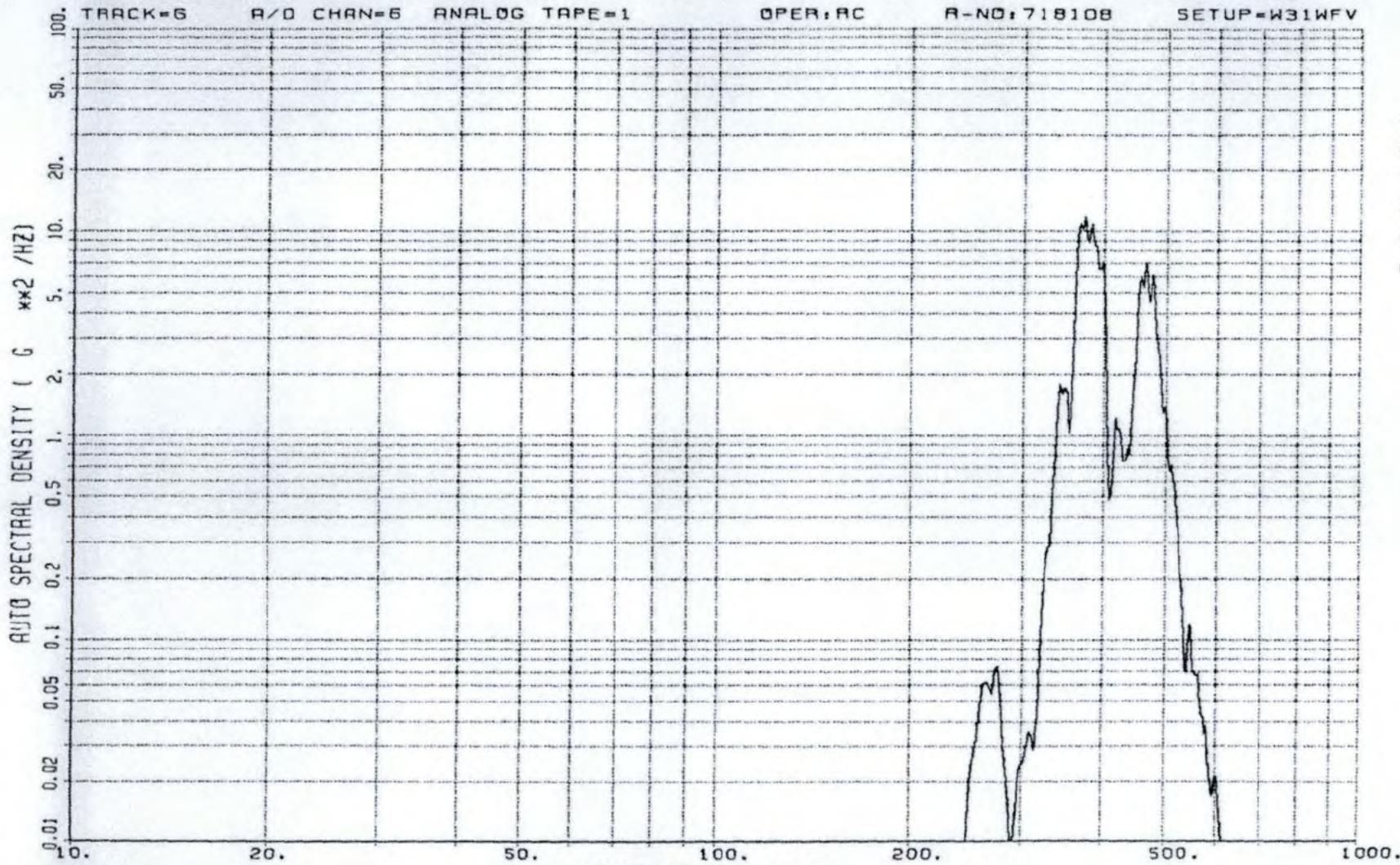
150100



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:2 RUN NO:2 RUN DESC:VERT. VIBRATION  
 TRANS:A3-Y FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Y  
 TEST DATE:07/03/85  
 FIGURE: 28

ENBW=5.094 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=26.338 PLOTTED: 10:33 AM THU., 18 JULY, 1985 FILE=PSEG06  
 TRACK=6 R/D CHAN=6 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



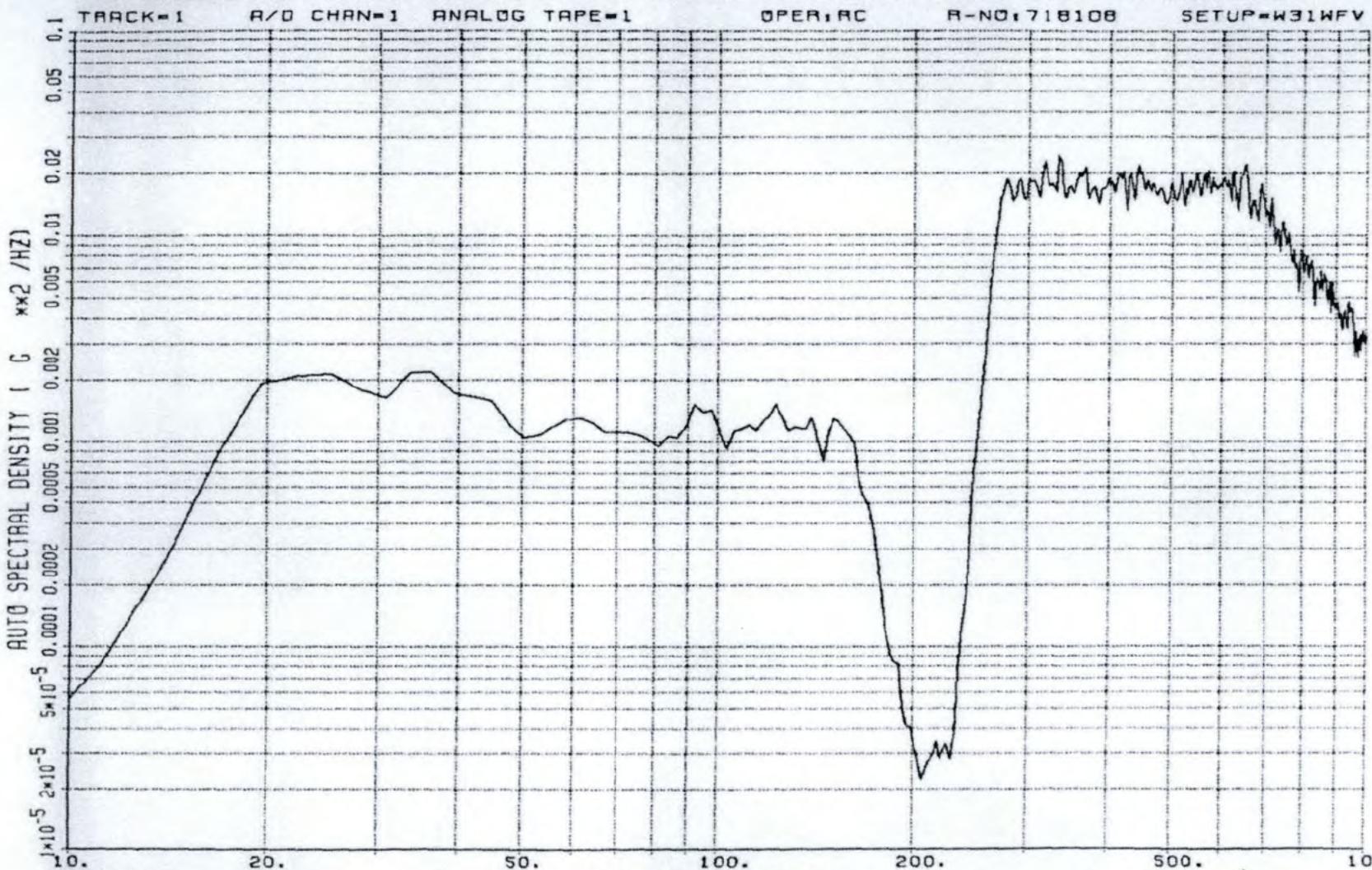
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX: 2 RUN NO: 2 RUN DESC: VERT. VIBRATION  
 TRANS: AS-Y MC3761 TRANS. AXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: ROOM

RUN AXIS: Y  
 TEST DATE: 07/03/85  
 FIGURE: 29

001052

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=3.112 PLOTTED:11:17 AM THU.. 18 JULY. 1985 FILE=PSEG01

TRACK=1 R/D CHAN=1 ANALOG TAPE=1 OPER,RC R-NO:718108 SETUP=W31WFV



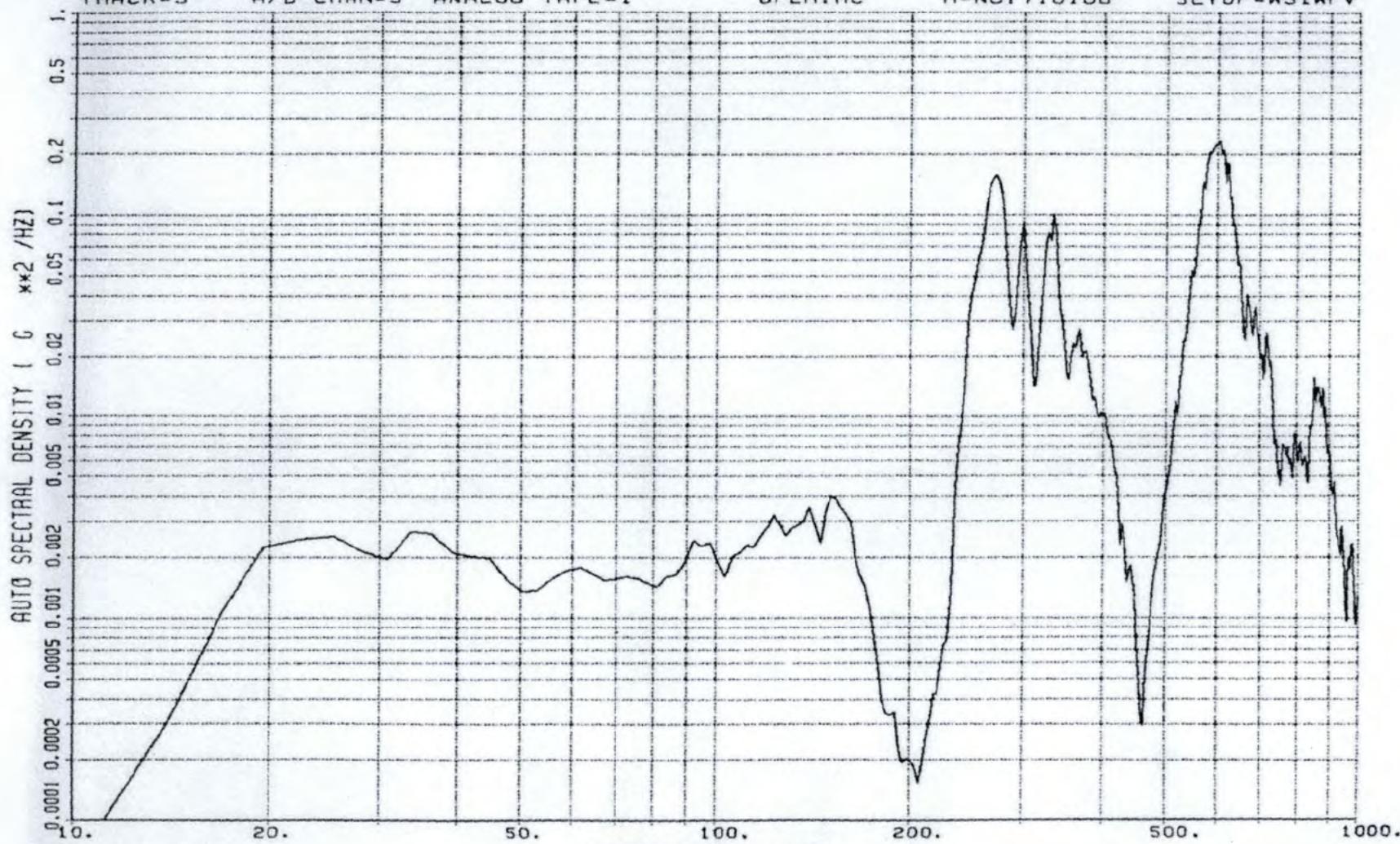
FREQUENCY (Hz)

RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:3 RUN NO:3 RUN DESC:VERT. VIBRATION  
 TRANS: A1-Y CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Y  
 TEST DATE:07/08/85  
 FIGURE: 30

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=5.289 PLOTTED:11:17 AM THU., 18 JULY, 1985 FILE=PSEH03  
 TRACK=3 R/D CHAN=3 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV

00105

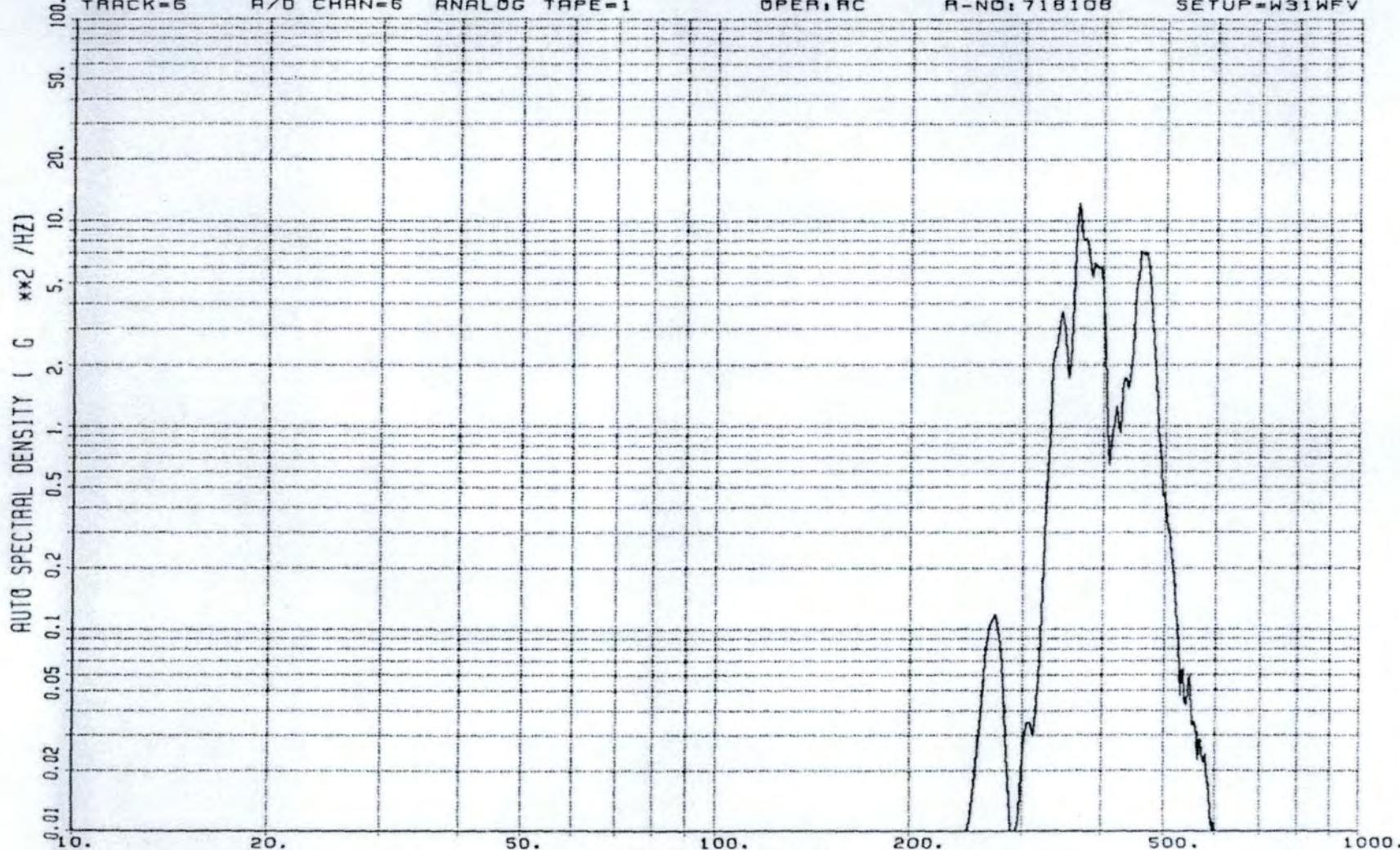


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:3 RUN NO:3 RUN DESC:VERT. VIBRATION  
 TRANS:A3-Y FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Y  
 TEST DATE:07/05/85  
 FIGURE: 31

ENBW=5.034 SE (%) = 17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=25.750 PLOTTED: 11:17 RM THU.. 18 JULY, 1985 FILE=PSEH06

TRACK=6 R/D CHAN=6 RNALOG TAPE=1 OPER:RC R-NO: 718108 SETUP=W31WFV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX: 3 RUN NO: 3 RUN DESC: VERT. VIBRATION  
 TRANS: A6-Y MC3761 TRANS. AXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: +125 F

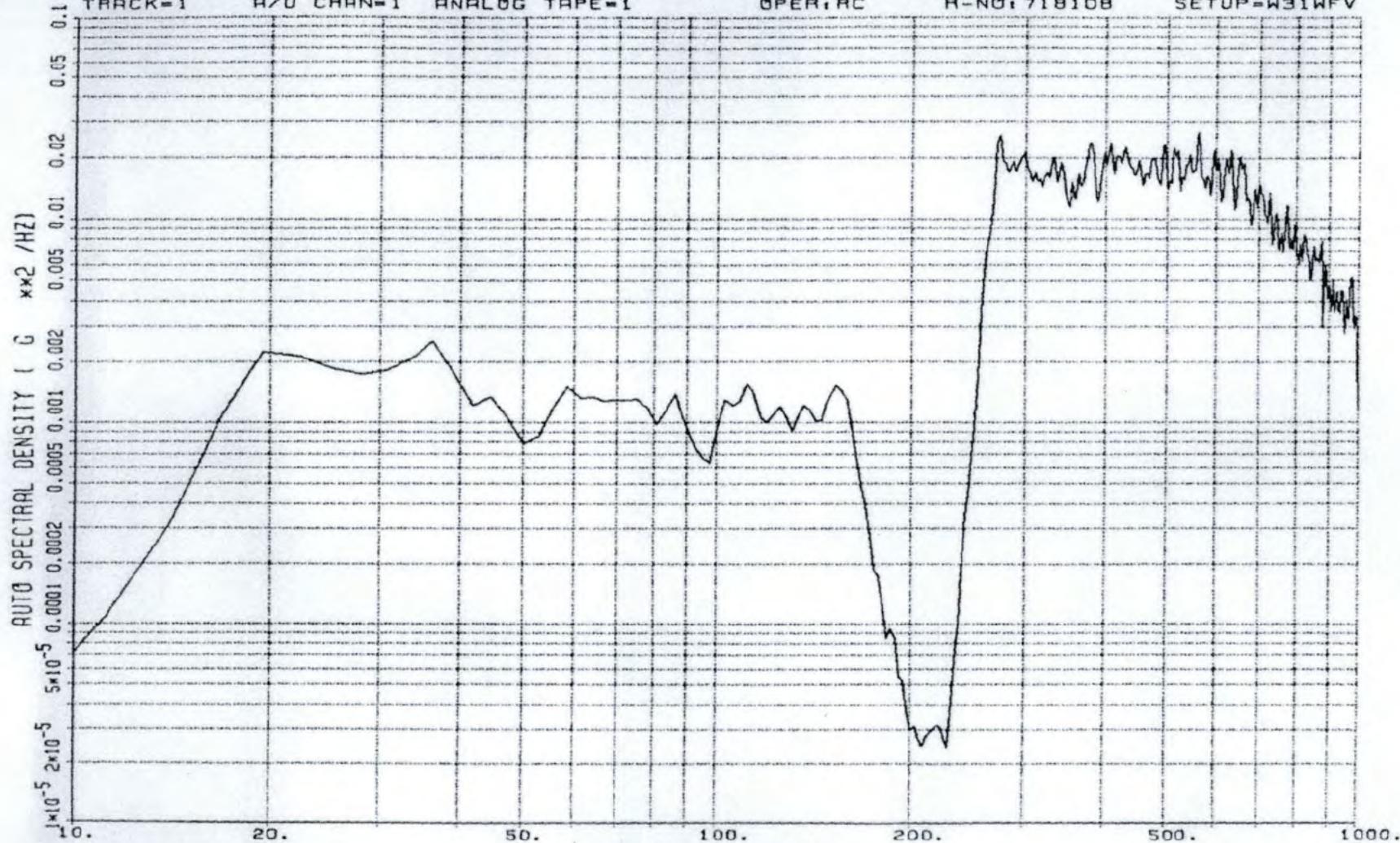
RUN AXIS: Y  
 TEST DATE: 07/08/85  
 FIGURE: 32

001055

94

ENBW=5.017 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11415.5 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=3.125 PLOTTED: 1:08 PM FRI., 19 JULY, 1985 FILE=PSEK01

TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-N0:718108 SETUP=W31WFV



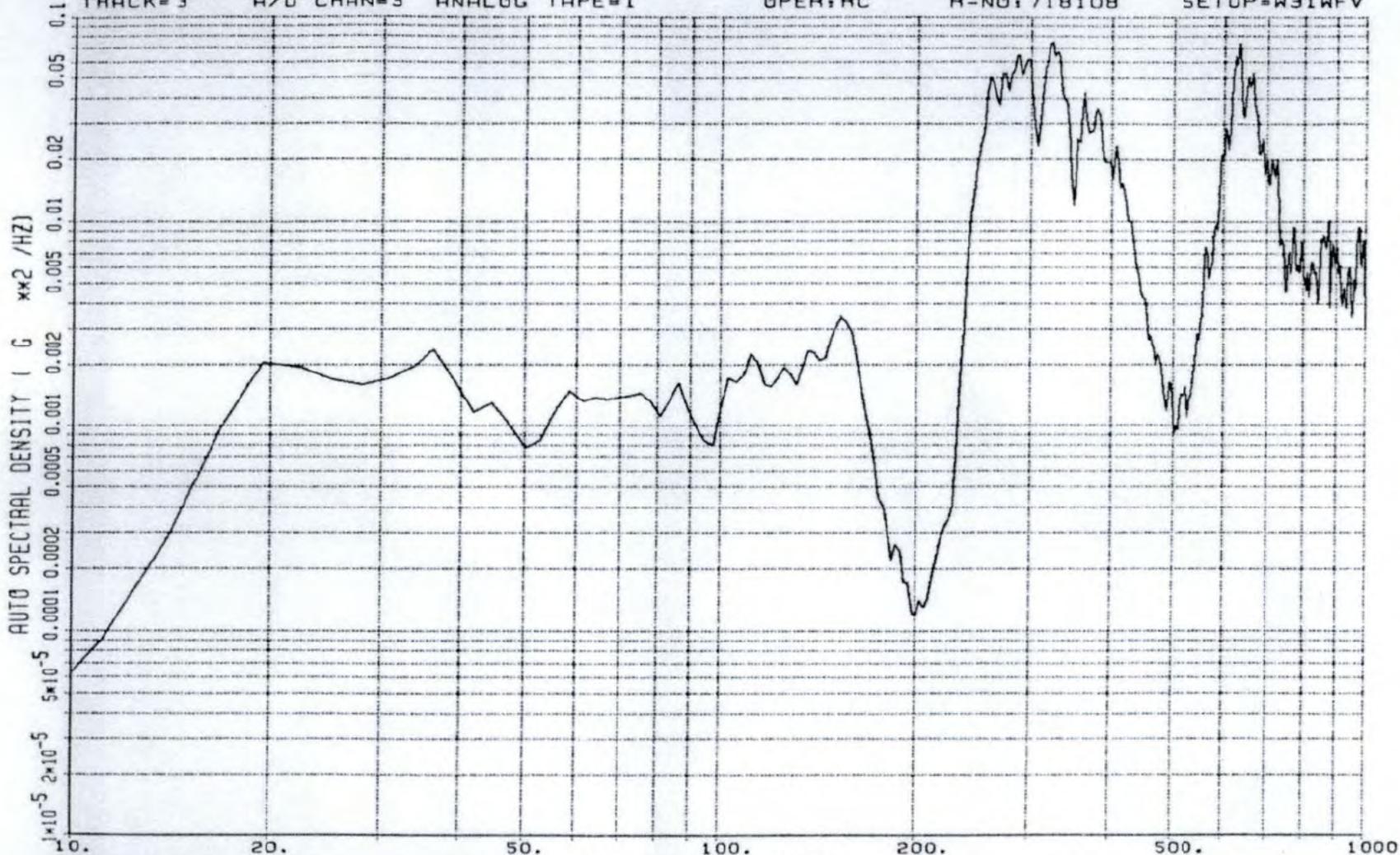
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:4 RUN NO:4 RUN DESC:VERT. VIBRATION  
 TRANS: A1-Y CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: -25 F

RUN AXIS: T  
 TEST DATE: 07/09/85  
 FIGURE: 33

00-056

ENBW=5.017 SE (%) = 17.6 WINDOW=KB SAMPLE RATE=11415.5 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=3.708 PLOTTED: 1:08 PM FRI.. 19 JULY. 1985 FILE=PSEK03

TRACK=3 A/D CHAN=3 ANALOG TRAPE=1 OPER,RC R-NO:718108 SETUP=W31WFV

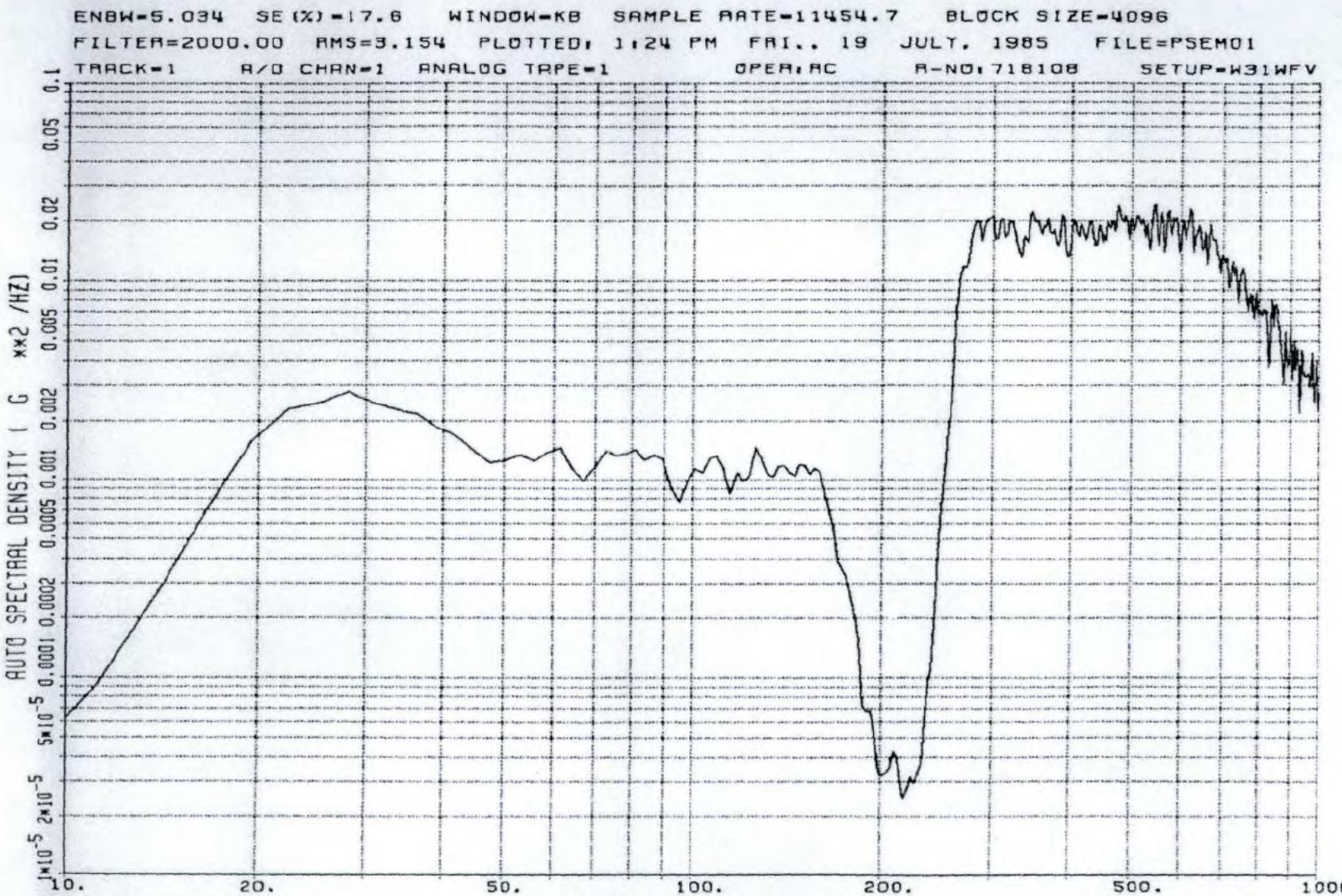


FREQUENCY (HZ)  
 RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:4 RUN NO:4 RUN DESC:VERT. VIBRATION  
 TRANS: A3-Y FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: -25 F

RUN AXIS: Y  
 TEST DATE: 07/09/85  
 FIGURE: 34

48

001057

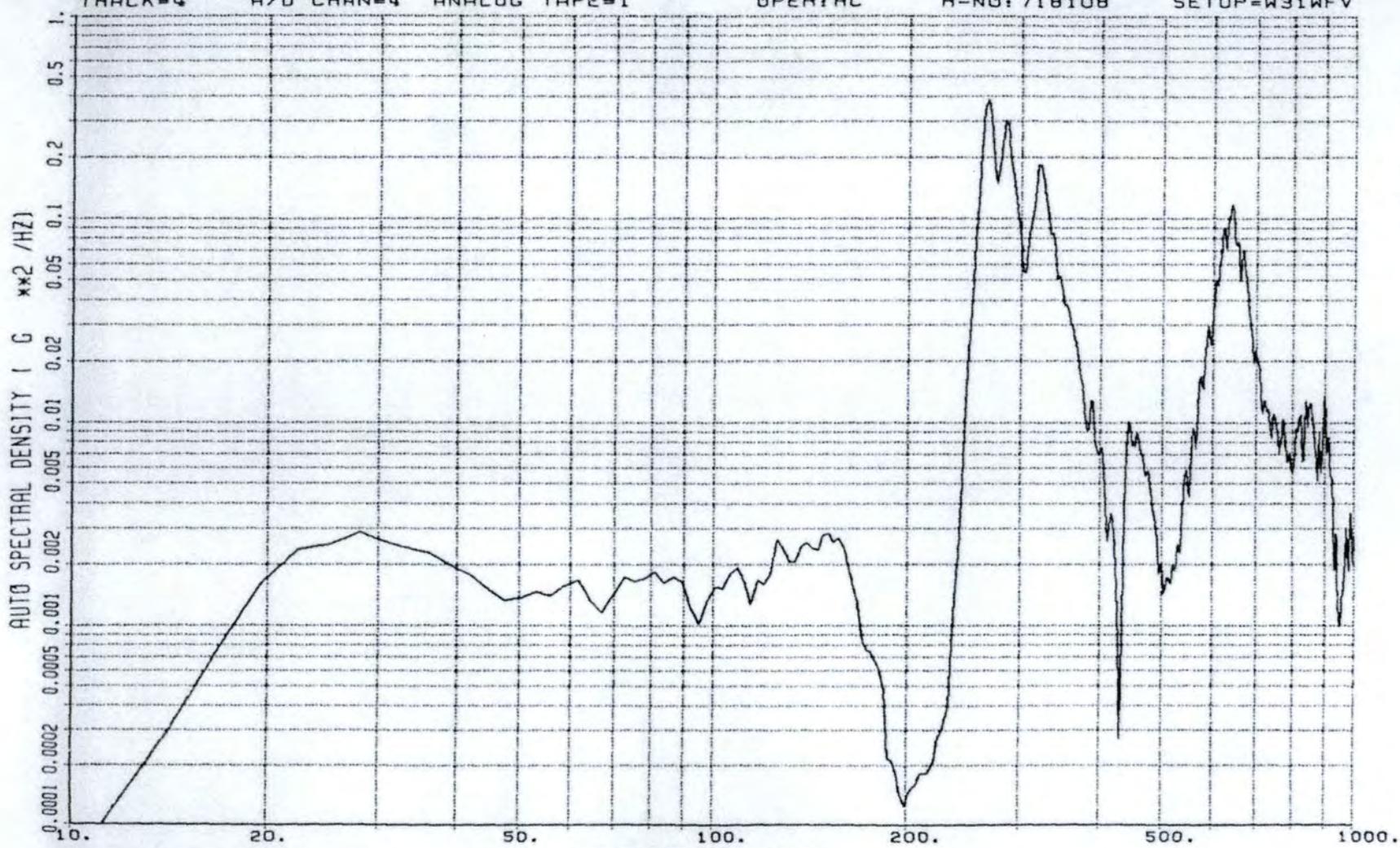


RANDOM ANALYSIS: W31 WARRIOR FLIGHT VIBRATION  
 RUN INDEX:5 RUN NO:5 RUN DESC:TRANS. VIBRATION  
 TRANS:A1-Z CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Z  
 TEST DATE:07/09/85  
 FIGURE: 35

85010

ENBW-5.034 SE (%) = 17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=5.095 PLOTTED: 1:24 PM FRI., 19 JULY, 1985 FILE=PSEM04  
 TRACK=4 A/D CHAN=4 ANALOG TAPE=1 OPER:RC R-N0:718108 SETUP=W31WFV

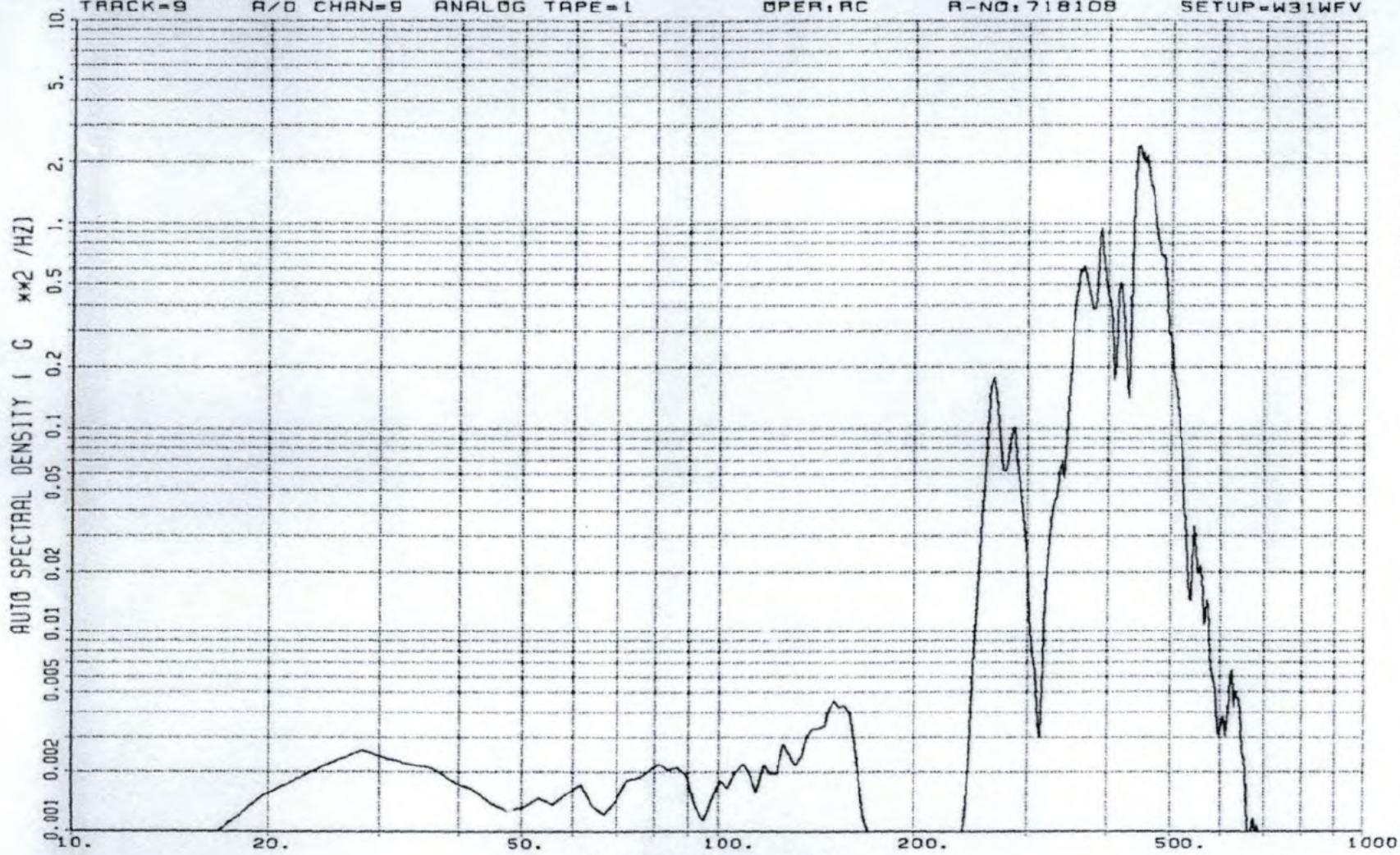


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:5 RUN NO:5 RUN DESC:TRANS. VIBRATION  
 TRANS:R4-Z FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Z  
 TEST DATE:07/09/85  
 FIGURE: 36

6C01059

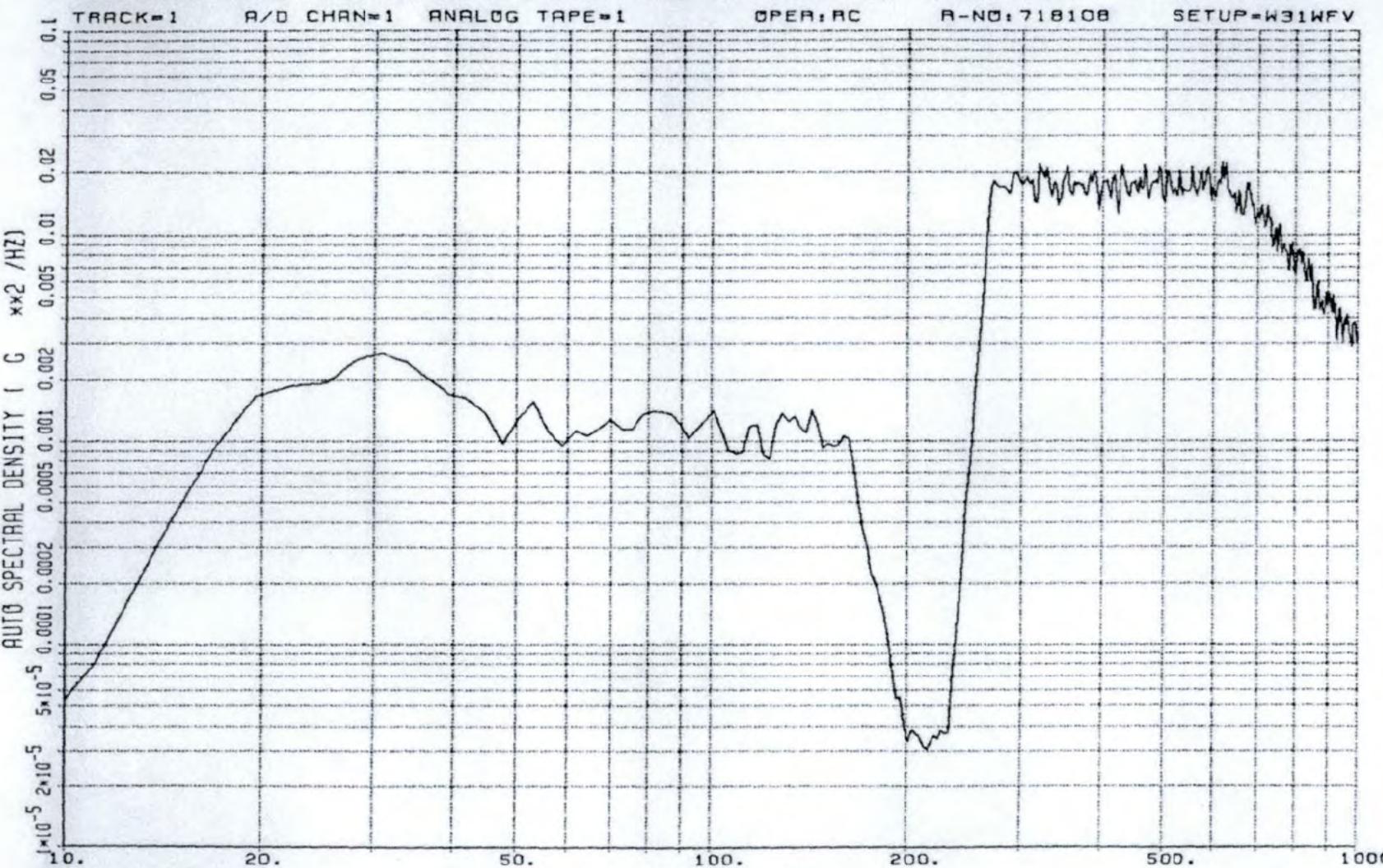
ENBW=5.034 SE (%) =17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
FILTER=2000.00 RMS=11.514 PLOTTED: 1:24 PM FRI., 19 JULY, 1985 FILE=PSEM09  
TRACK=9 A/D CHAN=9 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
RUN INDEX:5 RUN NO:5 RUN DESC:TRANS. VIBRATION  
TRANS:A9-Z MC3761 TRANS. AXIS:  
TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Z  
TEST DATE:07/09/85  
FIGURE: 37

ENBW-5.034 SE (%) - 17.6 WINDOW-KB SAMPLE RATE-11454.7 BLOCK SIZE-4096  
 FILTER=2000.00 RMS=3.114 PLOTTED: 1:42 PM FRI., 19 JULY, 1985 FILE=PSEN01



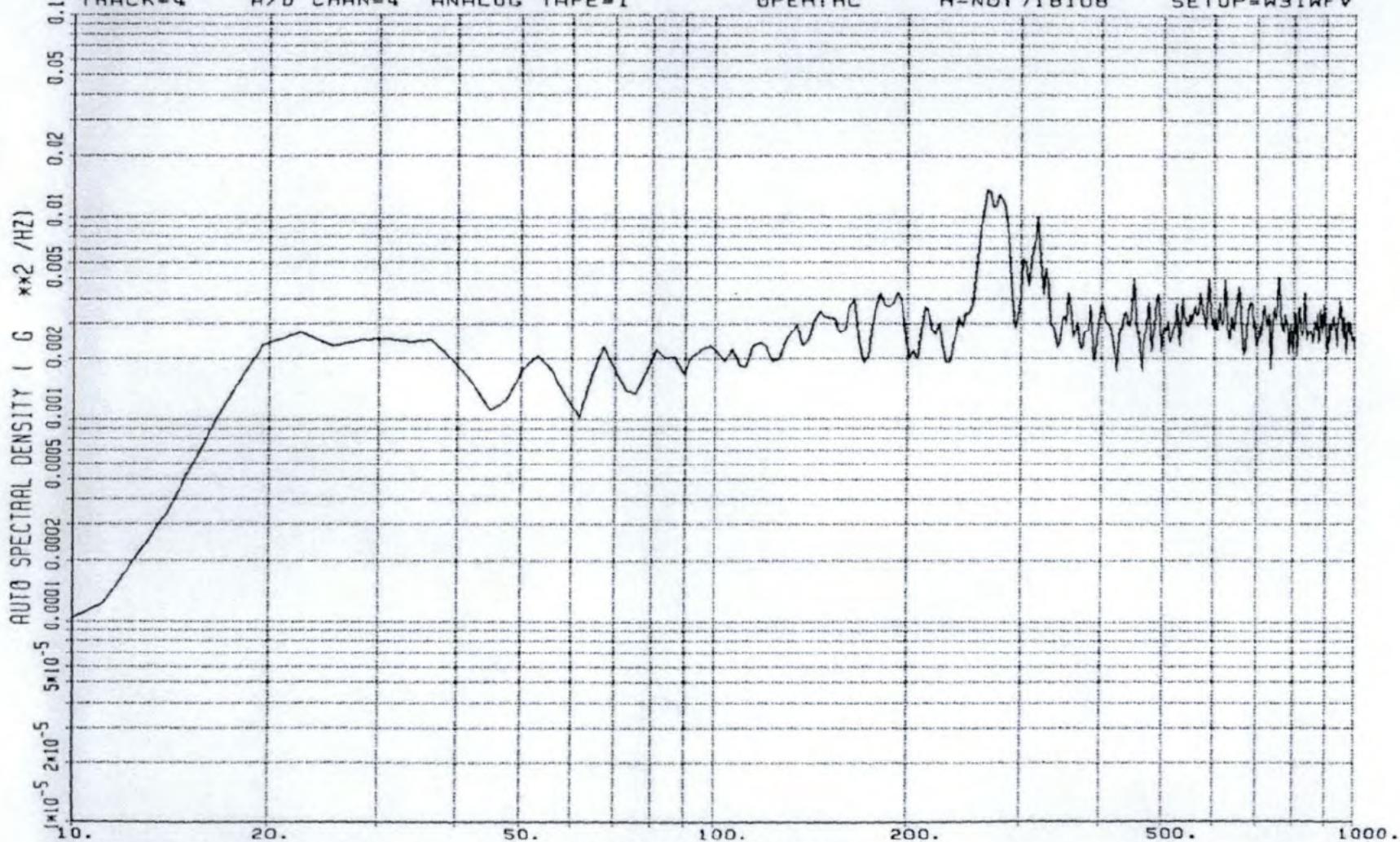
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:6 RUN NO:6 RUN DESC:TRANS. VIBRATION  
 TRANS:A1-Z CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Z  
 TEST DATE:07/10/85  
 FIGURE: 38

190100

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=2.405 PLOTTED: 1:42 PM FRI. 19 JULY. 1985 FILE=PSEN04

TRACK=4 R/D CHAN=4 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:6 RUN NO:6 RUN DESC:TRANS. VIBRATION  
 TRANS: A4-Z FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:+125 F

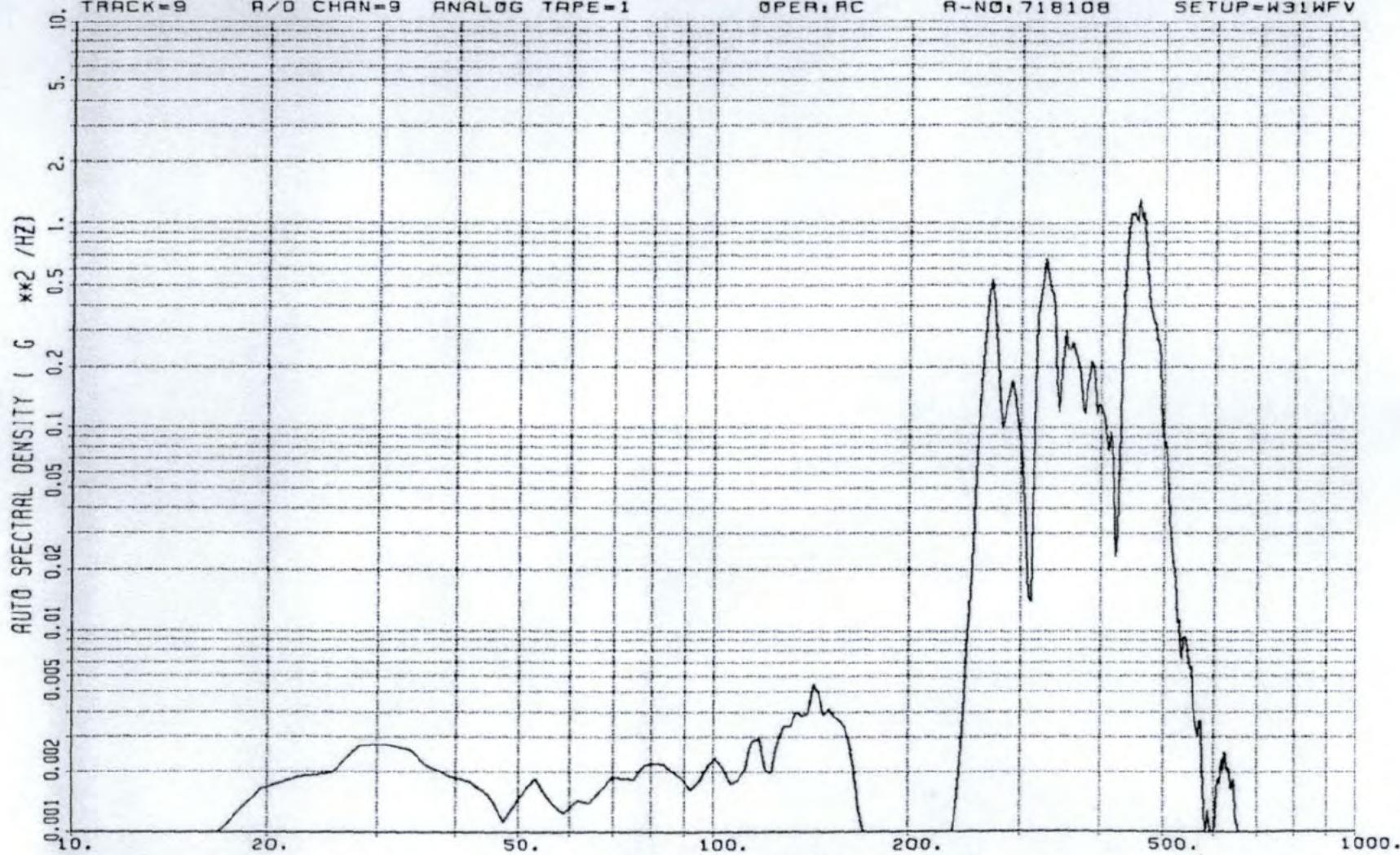
RUN AXIS:Z  
 TEST DATE:07/10/85  
 FIGURE: 39

BAD  
DATA

Fell off during Run

001062

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=9.086 PLOTTED: 1:42 PM FRI. 19 JULY 1985 FILE=PSEN09  
 TRACK=9 R/D CHAN=9 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WFV



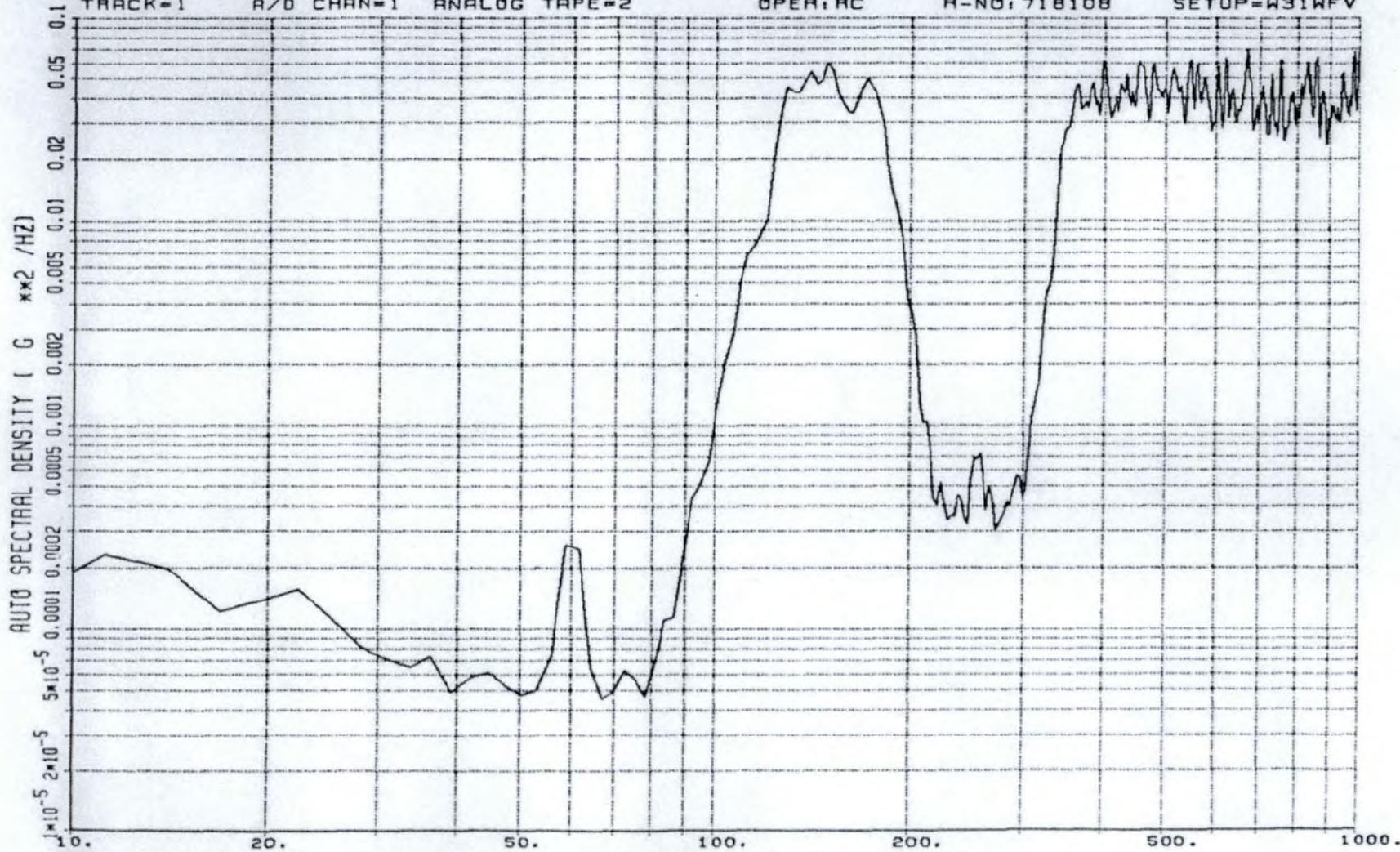
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:6 RUN NO:6 RUN DESC:TRANS. VIBRATION  
 TRANS: A9-Z' MC3761 TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Z  
 TEST DATE:07/10/85  
 FIGURE: 40

690100

ENBW-5.034 SE (%) - 17.6 WINDOW-KB SAMPLE RATE-11454.7 BLOCK SIZE-4096  
 FILTER=2000.00 RMS=5.613 PLOTTED: 1:39 PM THU. 18 JULY, 1985 FILE=PSEJ01

TRACK=1 R/D CHAN=1 ANALOG TAPE=2 OPER:RC R-NO:718108 SETUP=W31WFV

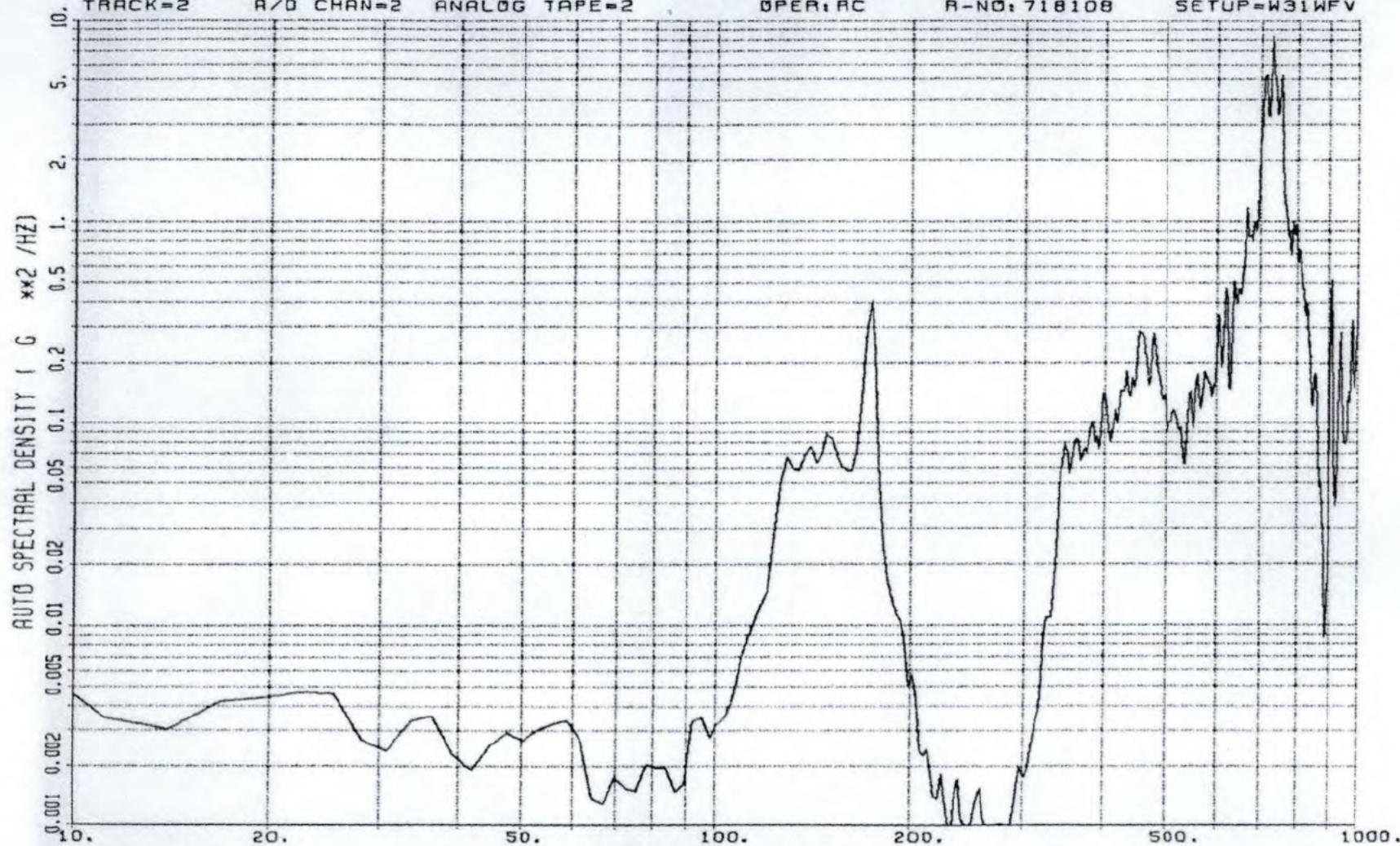


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:7 RUN NO:7 RUN DESC:LONG. VIBRATION  
 TRANS:A1-X CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:X  
 TEST DATE:07/11/85  
 FIGURE: 41

001064

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=21.689 PLOTTED: 1:39 PM THU.. 18 JULY. 1985 FILE=PSEJ02  
 TRACK=2 R/D CHAN=2 ANALOG TAPE=2 OPER:RC R-NO: 718108 SETUP=W31WFV

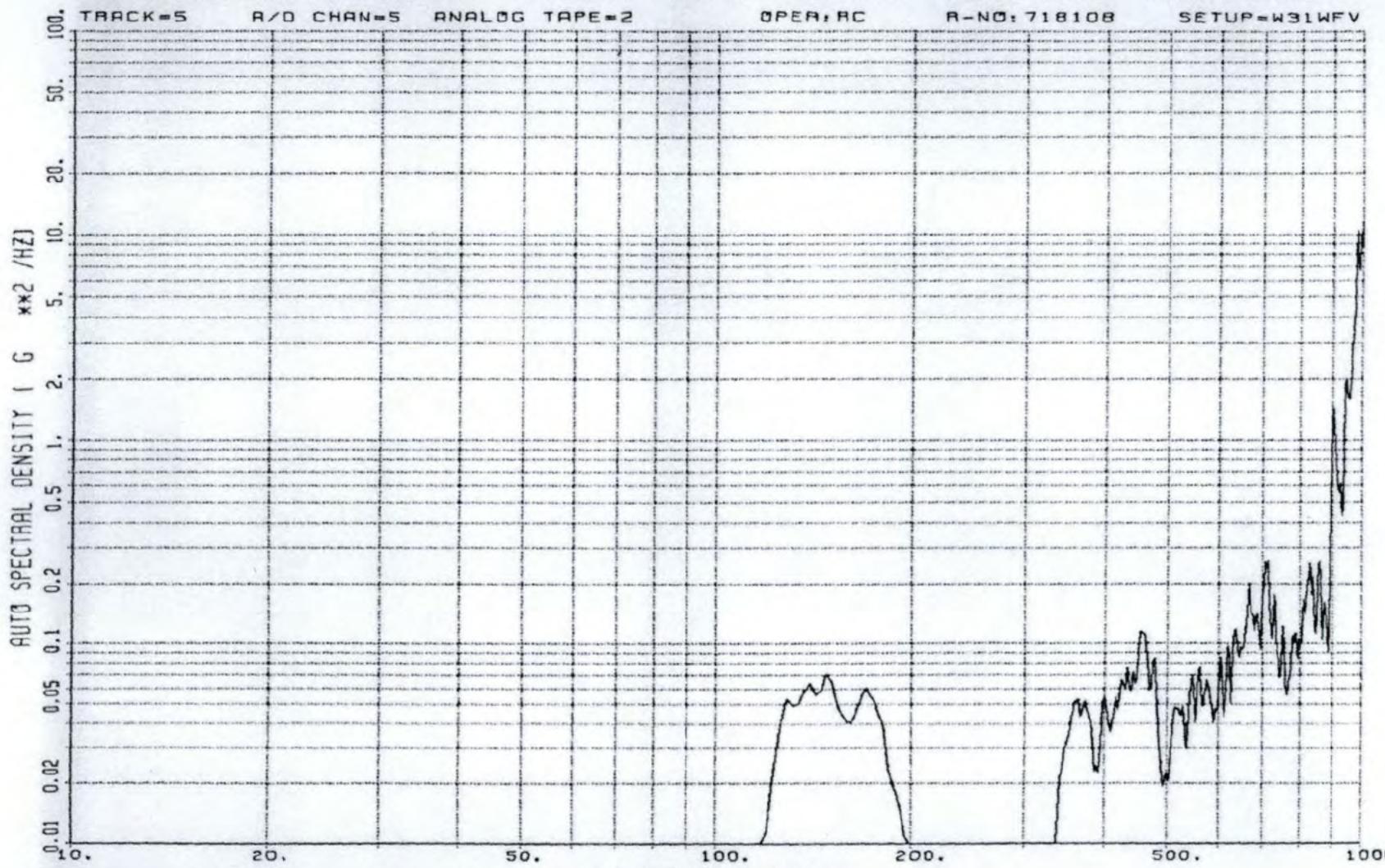


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX: 7 RUN NO: 7 RUN DESC: LONG, VIBRATION  
 TRANS: A2-X FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: ROOM

RUN AXIS: X  
 TEST DATE: 07/11/85  
 FIGURE: 42

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
FILTER=2000.00 RMS=21.697 PLOTTED: 1:39 PM THU.. 18 JULY, 1985 FILE=PSEK05

TRACK=5 R/D CHAN=5 ANALOG TAPE=2 OPER:RC R-NO:718108 SETUP=W31WFV



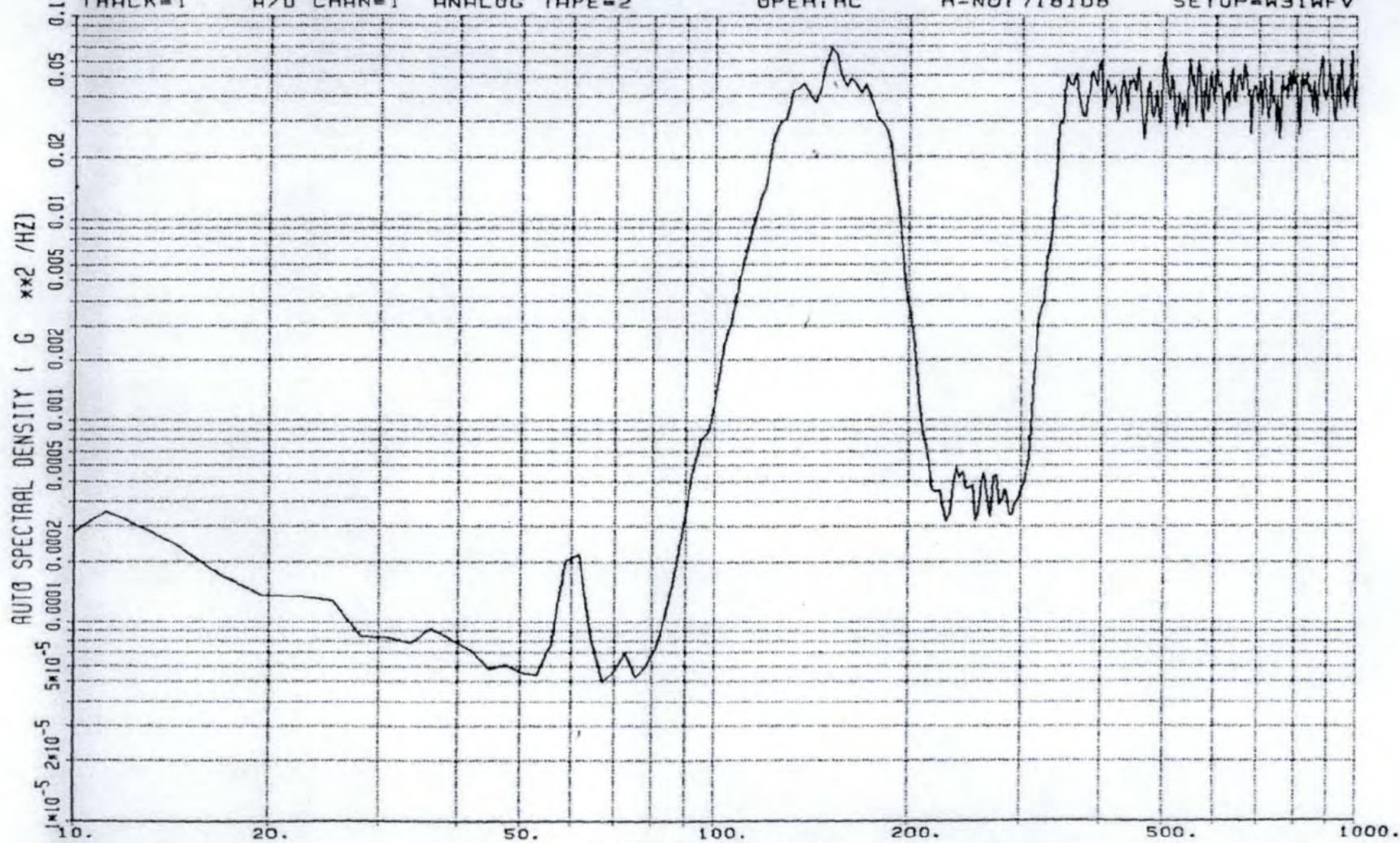
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
RUN INDEX:7 RUN NO:7 RUN DESC:LONG. VIBRATION  
TRANS:AS-X MC 3761 TRANS. AXIS:  
TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS: X  
TEST DATE: 07/11/85  
FIGURE: 43

690100

ENBW-5.034 SE (%) = 17.6 WINDOW-KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=5.657 PLOTTED: 1:12 PM THU. 18 JULY, 1985 FILE=PSEID1

TRACK=1 A/D CHAN=1 ANALOG TAPE=2 OPER:RC R-N0:718108 SETUP=W31WFV

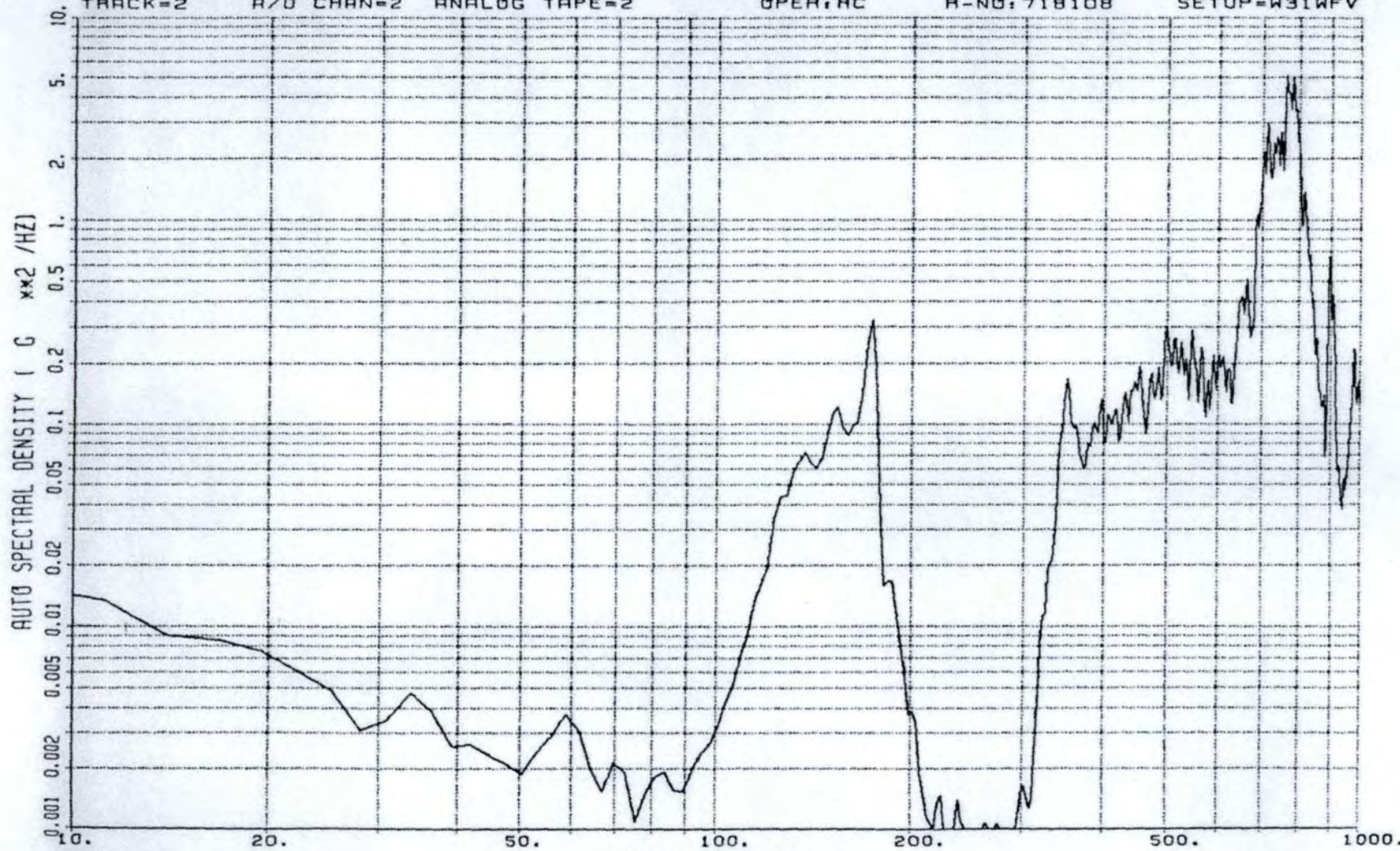


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:8 RUN NO:8 RUN DESC:LONG. VIBRATION  
 TRANS: A1-X CONTROL FIXTURE BASE TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:X  
 TEST DATE:07/12/85  
 FIGURE: 44

ENBW=5.034 SE(%)=17.6 WINDOW-KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=21.183 PLOTTED: 1:12 PM THU.. 18 JULY, 1985 FILE=PSEI02

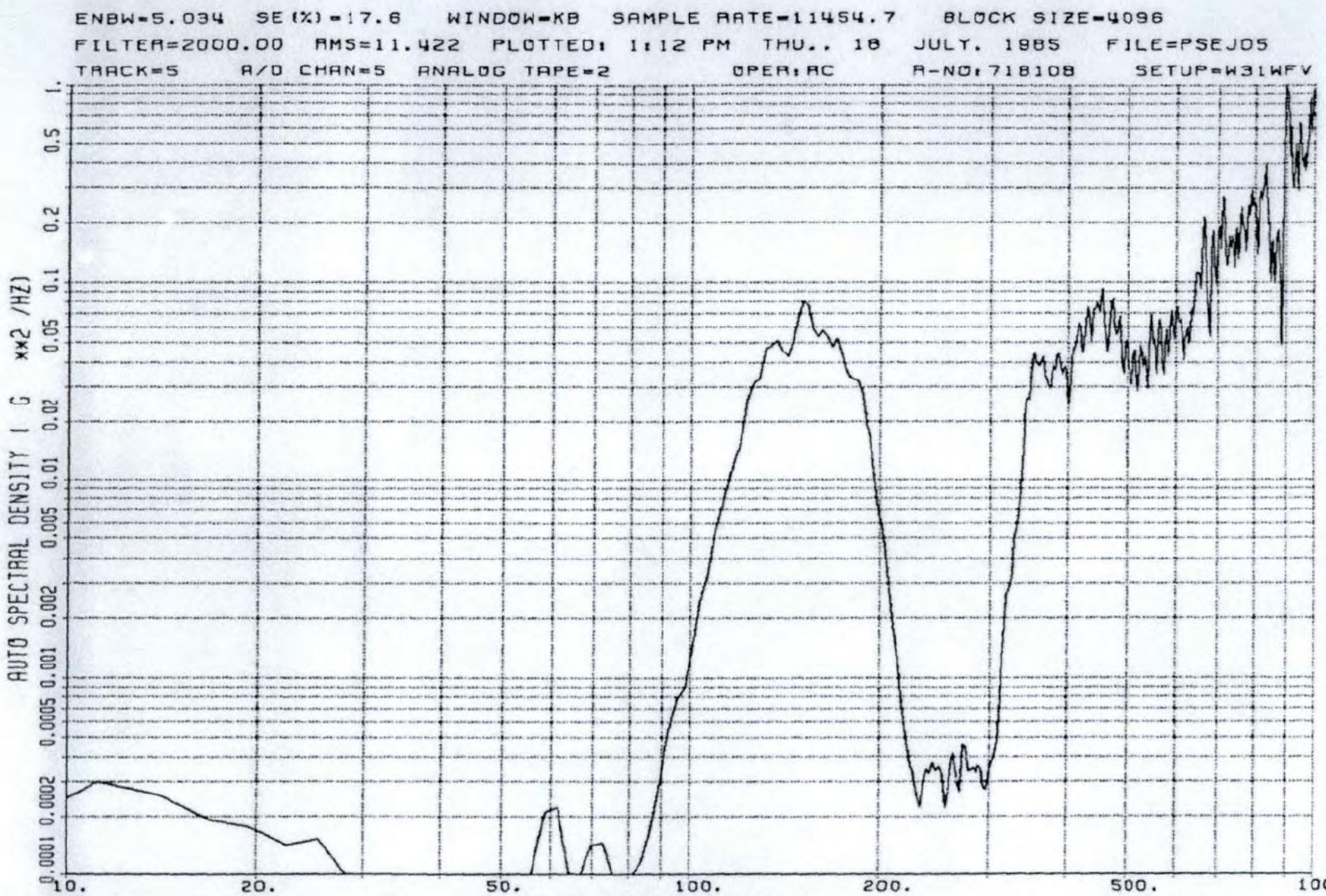
TRACK=2 R/D CHAN=2 RNALOG TAPE=2 OPER:RC R-N0:718108 SETUP=W31WFV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:8 RUN NO:8 RUN DESC:LONG. VIBRATION  
 TRANS:A2-X FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:X  
 TEST DATE:07/12/85  
 FIGURE: 45

890100

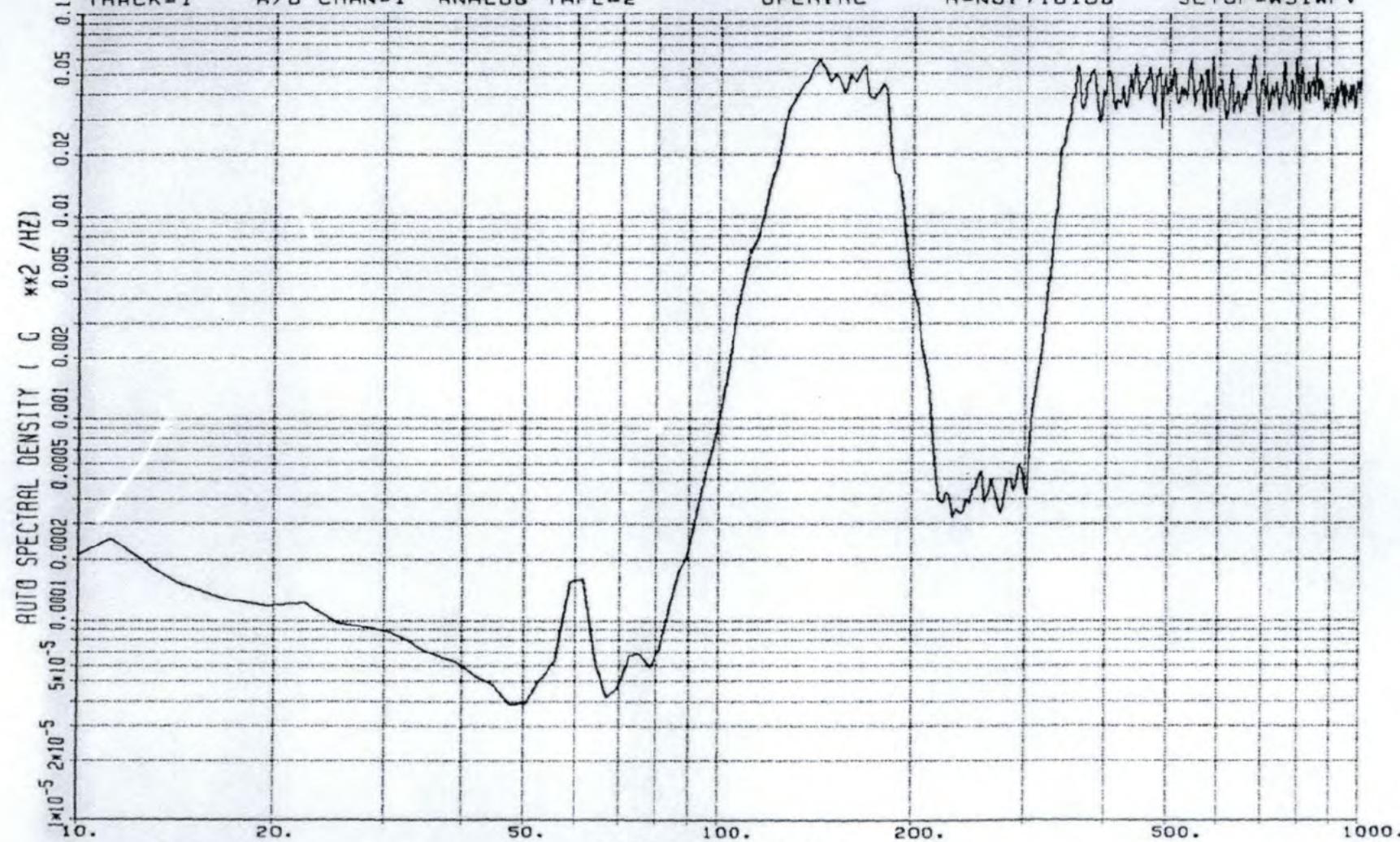


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
RUN INDEX: 8 RUN NO: 8 RUN DESC: LONG. VIBRATION  
TRANS: A5-X MC 3761 TRANS. AXIS:  
TEST DURATION: 5 MIN. TEST TEMP: -25 F

RUN AXIS: X  
TEST DATE: 07/12/85  
FIGURE: 46

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=5.641 PLOTTED: 11:50 AM THU.. 18 JULY. 1985 FILE=PSEH01

TRACK=1 R/D CHAN=1 ANALOG TAPE=2 OPER:RC R-N0:718108 SETUP=W31WFV

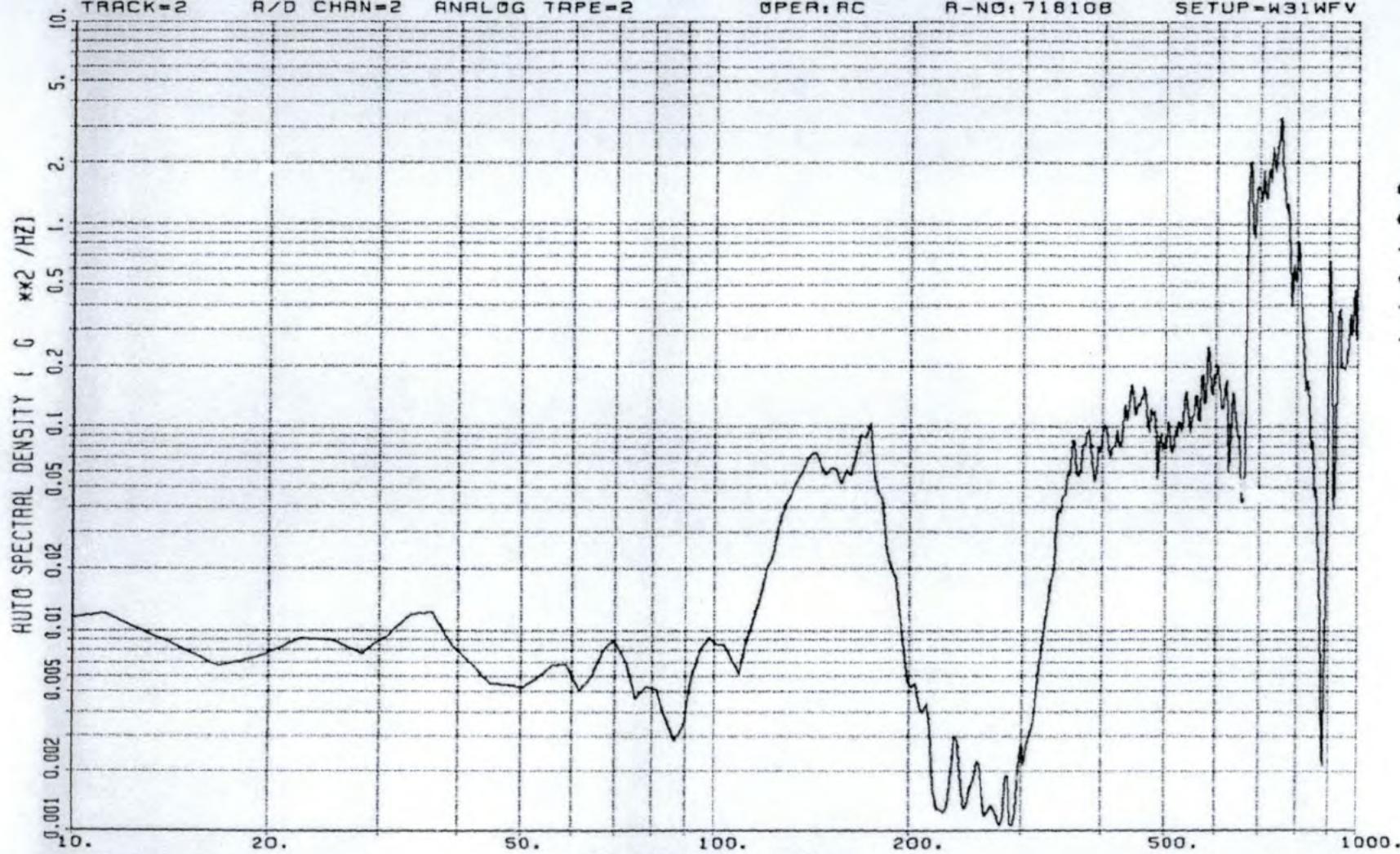


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:9 RUN NO:9 RUN DESC:LONG. VIBRATION  
 TRANS: A1-X CONTROL FIXTURE BASE TRANS. RXIS:  
 TEST DURATION: 5 MIN. TEST TEMP: +125 F

RUN RXIS: X  
 TEST DATE: 07/15/85  
 FIGURE: 47

001070

ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
 FILTER=2000.00 RMS=17.469 PLOTTED:11:50 AM THU.. 18 JULY, 1985 FILE=PSEH02  
 TRACK=2 A/D CHAN=2 ANALOG TRPE=2 OPER:RC R-NO: 718108 SETUP=W31WFV



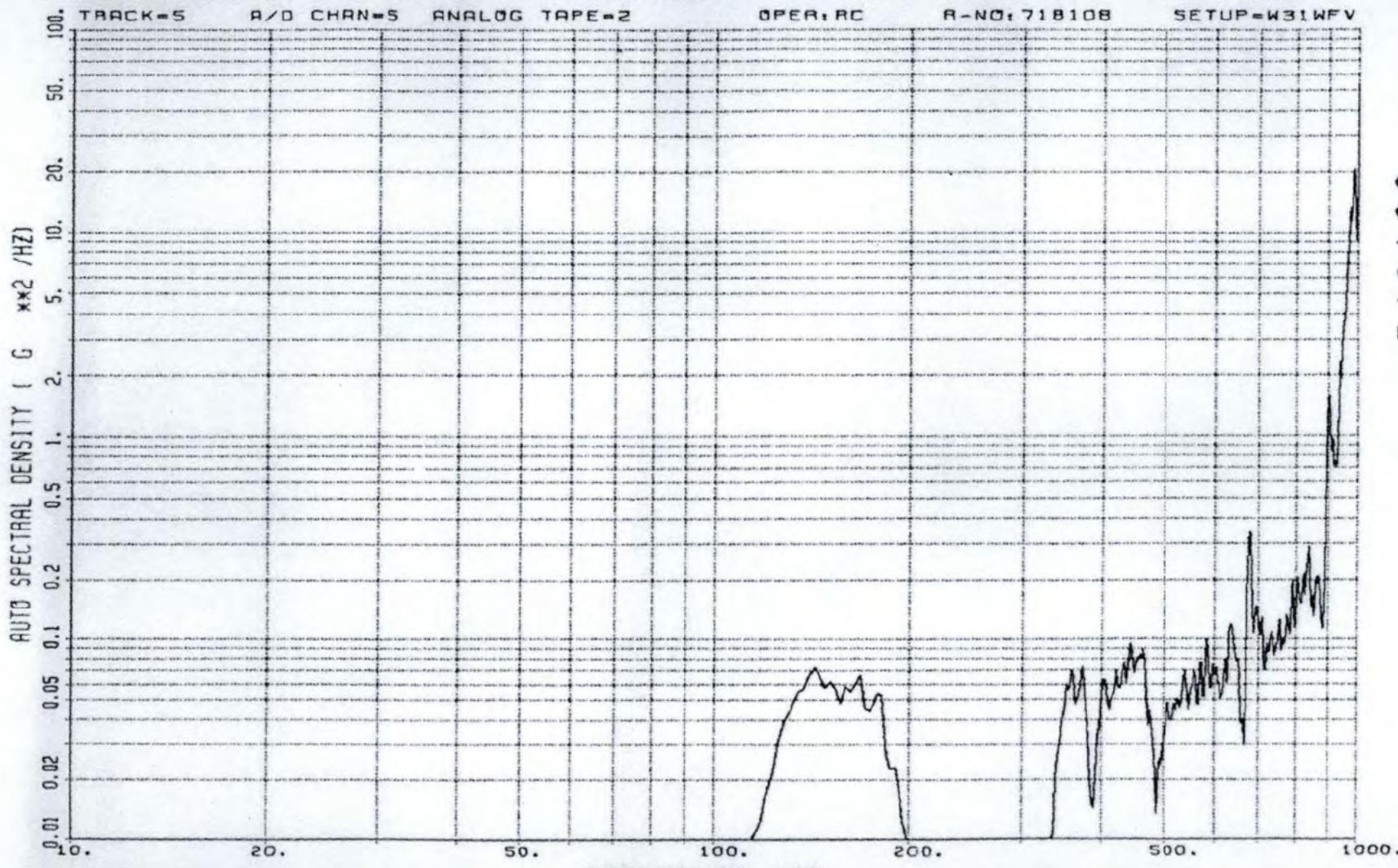
FREQUENCY (Hz)  
 RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
 RUN INDEX:9 RUN NO:9 RUN DESC:LONG. VIBRATION  
 TRANS:A2-X FIRING SET HOUSING TRANS. AXIS:  
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:X  
 TEST DATE:07/15/85  
 FIGURE: 48

62

001071

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096  
FILTER=2000.00 RMS=34.000 PLOTTED: 11:50 AM THU.. 18 JULY. 1985 FILE=PSEI05  
TRACK=5 A/D CHAN=5 ANALOG TAPE=2 OPER:RC R-NO: 718108 SETUP=W31W



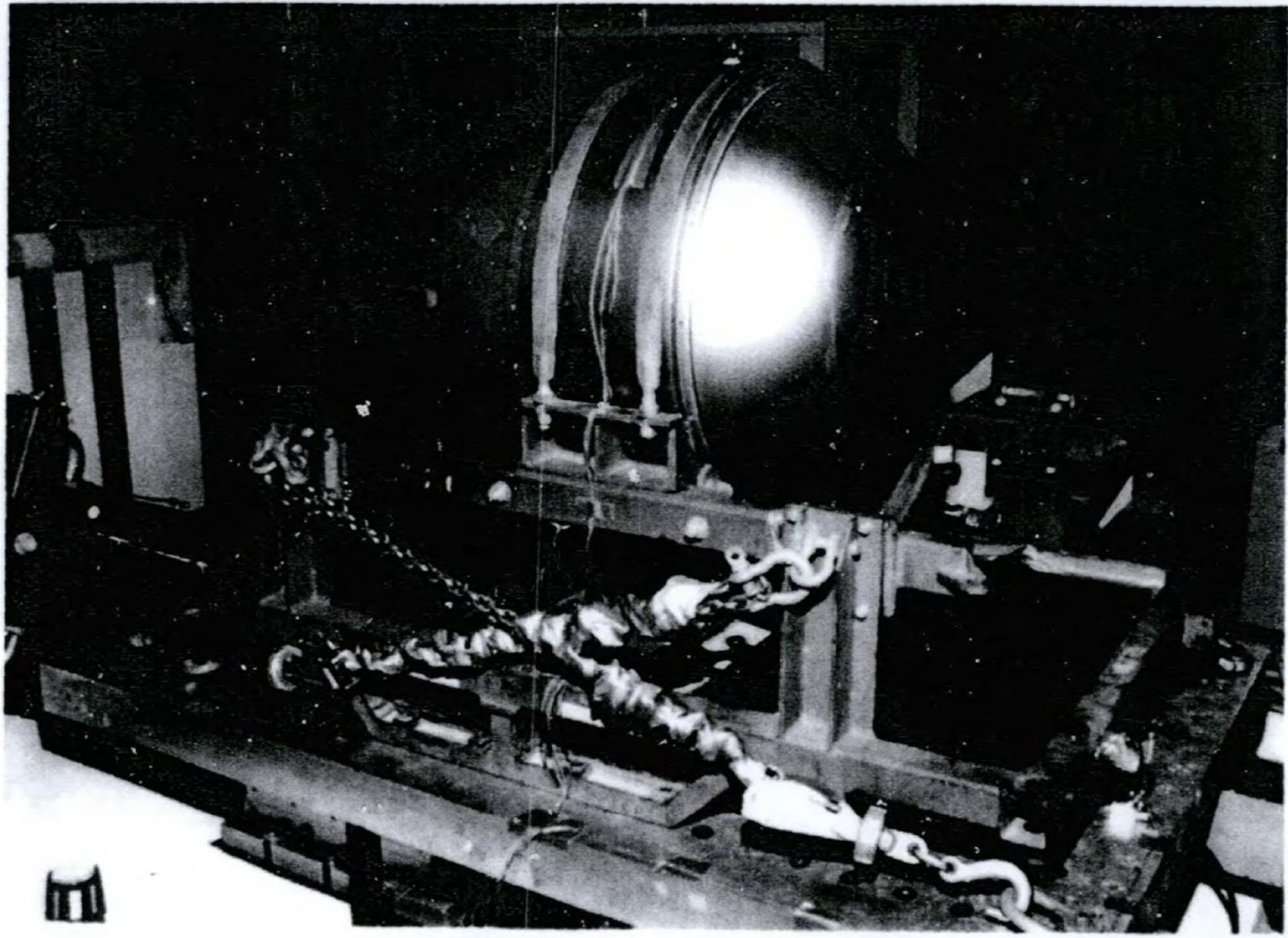
FREQUENCY (HZ)  
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION  
RUN INDEX: 9 RUN NO: 9 RUN DESC: LONG. VIBRATION  
TRANS: A5-X MC 3761 TRANS. AXIS:  
TEST DURATION: 5 MIN. TEST TEMP: +125 F

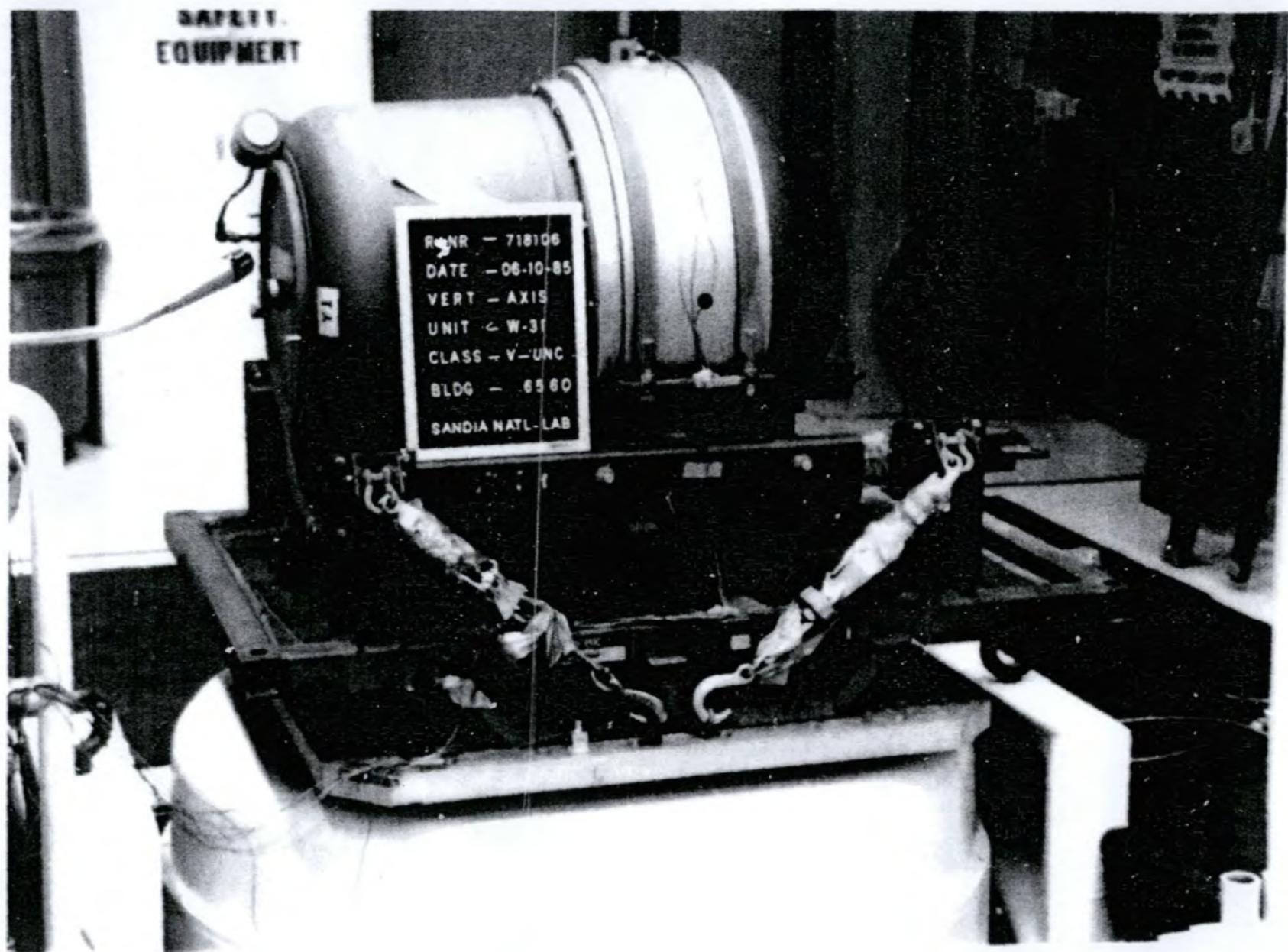
RUN AXIS: X  
TEST DATE: 07/15/85  
FIGURE: 49

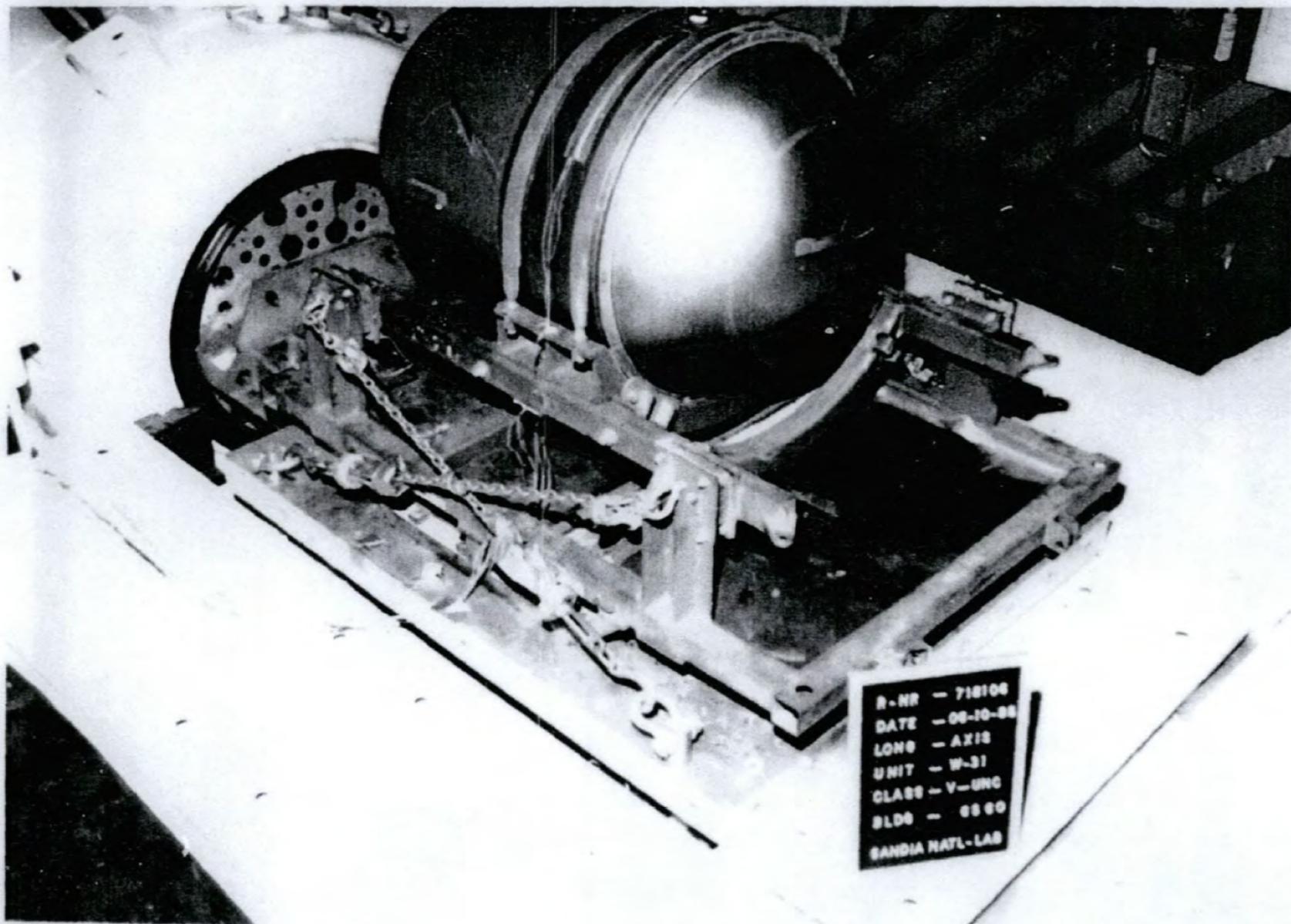
001073

APPENDIX

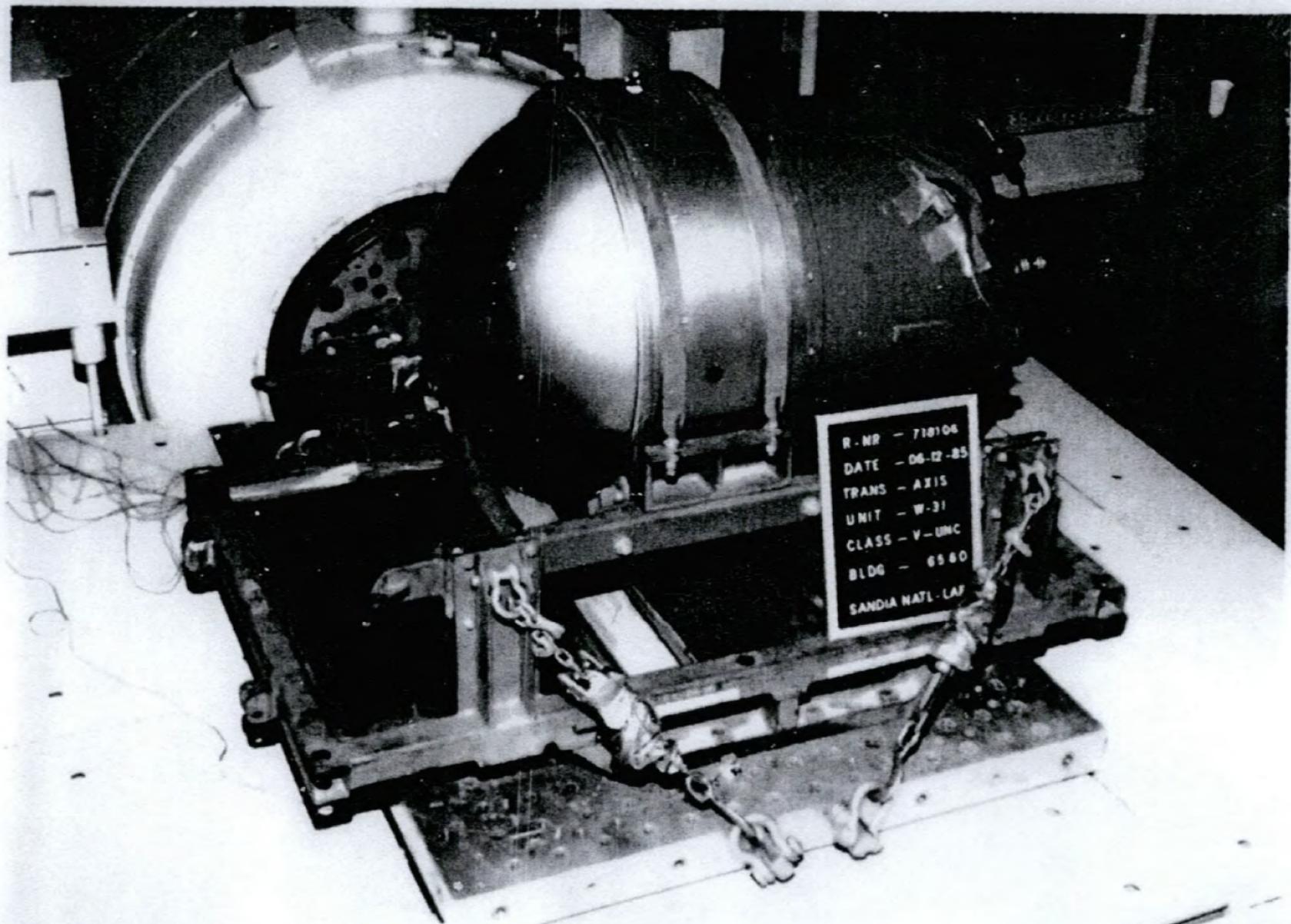
COLOR PHOTOGRAPHS





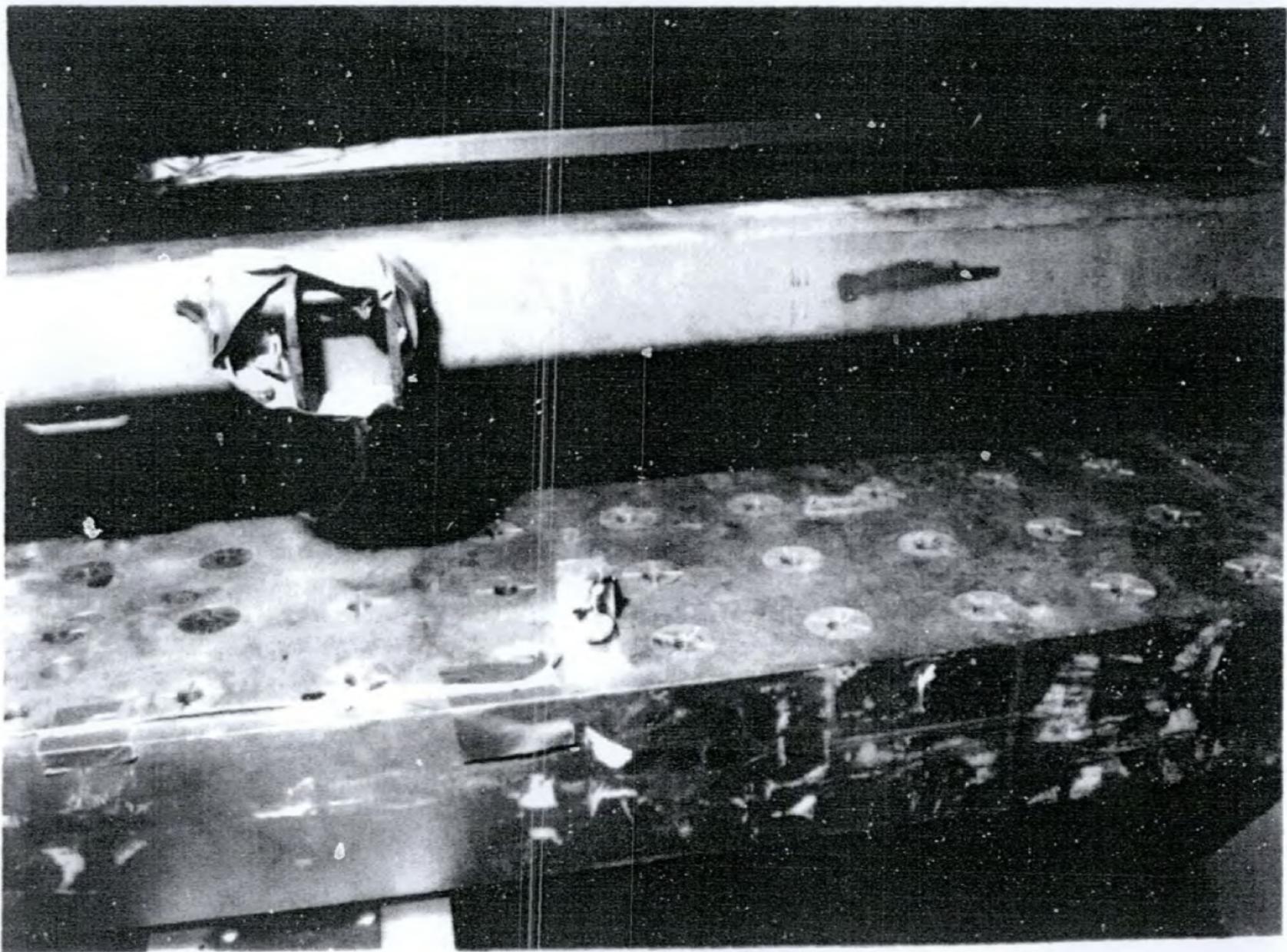


001076



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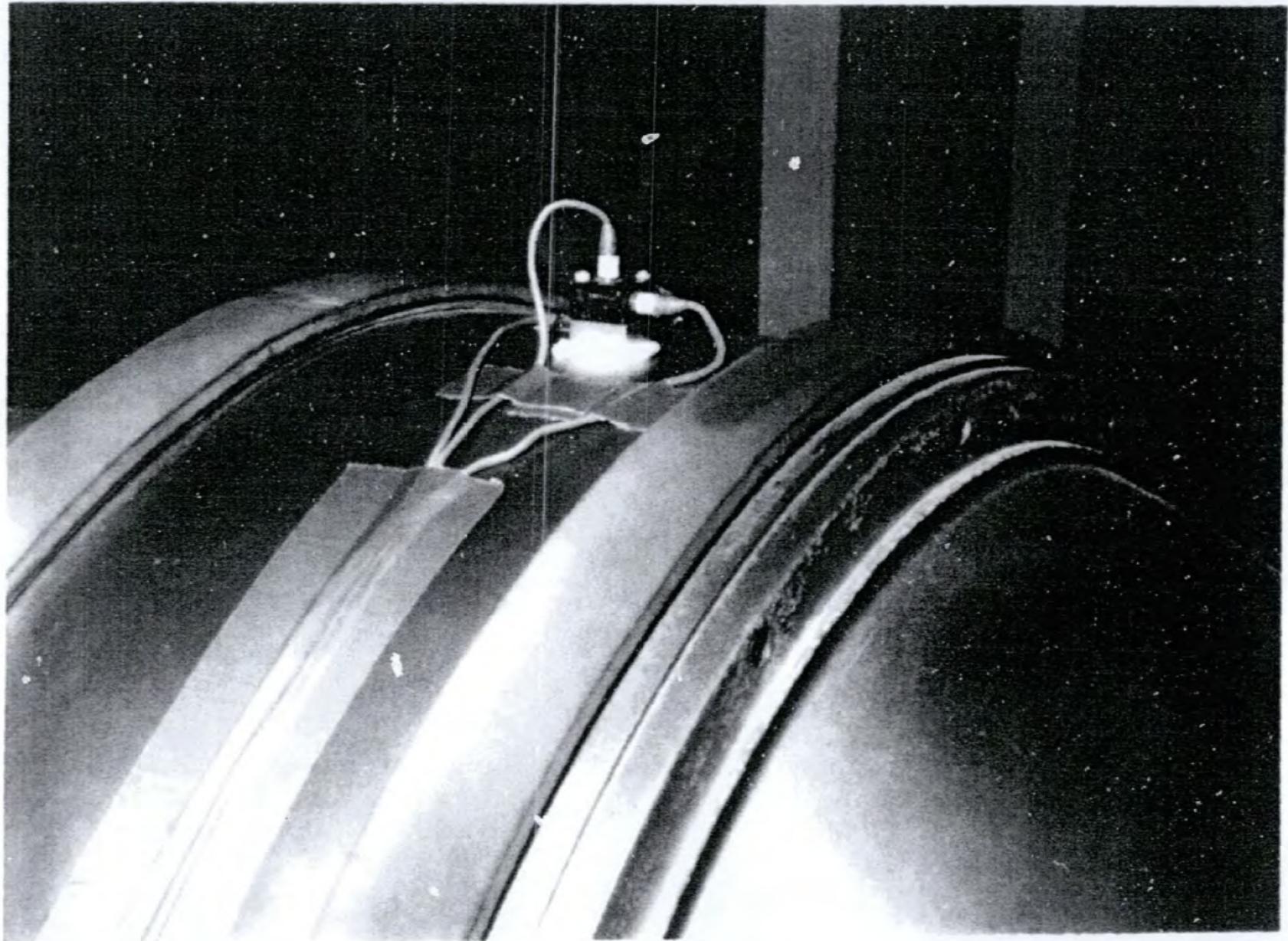


69

001078

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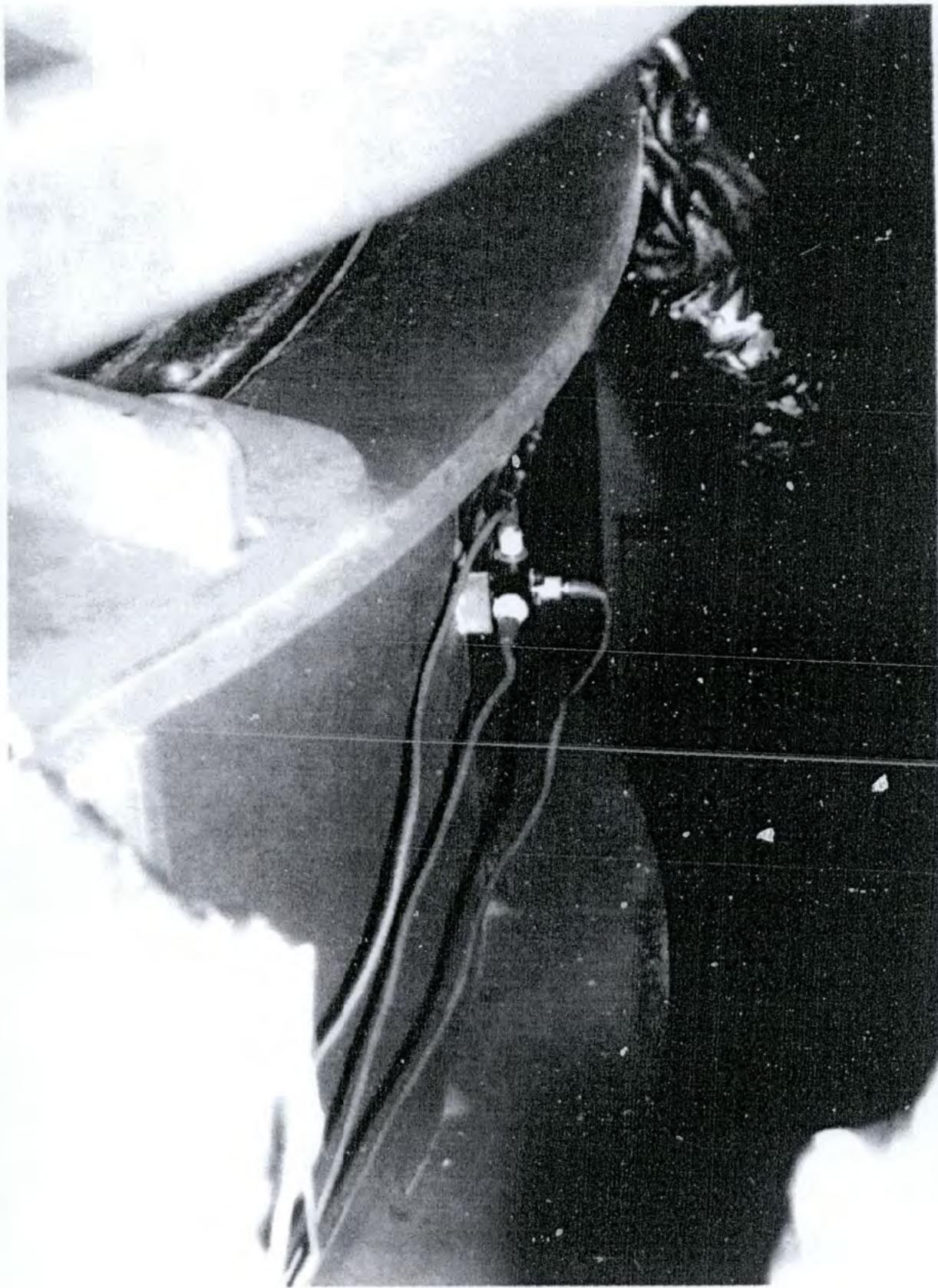


70

6601079

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